THE ENGINEERING AND MINING JOURNAL AND COAL

Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LIX. JUNE 15. No. 24.

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SOPHIA BRAEUNLICH, Business Manager.

THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS to THE ENGINEERING AND MINING JOURNAL are PAYABLE IN ADVANCE. Price: For the United States, Mexico and Canada, $5 per annum; $2.50 for six months: all other countries in the Postal Union, $7.

The address slip on the paper will show date of expiration of subscription. Subscribers wishing their address changed will please give the name of the old post-office as well as the new one.

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ADVERTISING RATES furnished on application.

REMITTANCES should always be made by Bank Drafts, Post-Office Orders or Express Money Orders on New York, payable to THE SCIENTIFIC PUBLISHING CO.

THE SCIENTIFIC PUBLISHING COMPANY.

OFFICERS:

R. P. ROTHWELL, Pres. & Gen'l Mang.

SOPHIA BRAEUNLICH, SEC'Y & TREAS.

P. O. BOX 1833.

253 Broadway, New York.

Cable Address: "Rothwell, New York. Use McNeill's Code.

LONDON OFFICE: 20 Bucklersbury (Rooms 366 and 367), London, E. C., England. Edward Walker, Manager.

CHICAGO OFFICE: Monadnock Building, Room 737.

DENVER OFFICE: Cooper Building, Room 301.

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THE HEADQUARTERS OF THE MINING INDUSTRY.

Visitors find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested. They can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

We are informed by telegraph that the revised estimates of the world's production of gold and silver, prepared by Director of the Mint Preston, are now nearly complete. According to this statement the total gold production for 1894 was $181,500,000, and the silver $214,000,000. The gold output shows an increase of $23,000,000 over that of 1893, and the silver again of $1,000,000 in U. S. coining value. The statement reaches us too late for comment, or for any entrance into details.

It is a fact worthy of note that iron ore is now being shipped from this city to Rotterdam, Holland, for the use of furnaces making iron for basic steel purposes. It is likely that before long shipments will also be made to England. This ore, from the Port Henry ore beds, in the northern part of New York State, contains over 1·70 per cent. phosphorus and about 61 per cent. iron. It is, therefore, eminently suited for the manufacture of basic pig. Thus far about 1,500 tons have been shipped.

Our latest advices from the Cœur d'Alene district in Idaho are to the effect that a violent outbreak may be expected at any time. The unscrupulous leaders of the Miners' Union seem determined to meet the stand taken by the better element among the people by a display of brute force. Already two or three murders are reported, and threats are openly made that the trestle and other works at the Bunker Hill & Sullivan Mine will be destroyed. The law-and-order partisans seem determined to stand their ground, but probably they are outnumbered by their opponents. We hope sincerely that the government of Idaho will prove equal to the occasion and will not hesitate to put down mob violence in the Cœur d'Alenes with all the force at the command of the State. We repeat here, as we have often said before, that such vigorous action is the only hope for the future in that community, and the sooner it is taken the better for all concerned.

THE AMERICAN EXPORT TRADE.

The following interesting table has been compiled by the "Australasian Ironmonger" to show the result of German and American competition with British goods in New South Wales:

	1885.	1890.	1891.	1892.	1893.
Indiarubber goods, total	£21,167	£32,012	£29,286	£21,313	£18,620
Percentage from U. S. A.	3.7	2 4	1.6	3.01	4.07
" " Ger. and Bel.	10.8	7.8	6.5	6.6	5.02
Silverplate and plated ware, total	£90,067	£84,241	£84,482	£57.073	£36,543
Percentage from U. S. A.	8.8	6.1	15.1	9.7	6.1
" " Bel. and Ger.	0.2	1.5	1.02	2.2	0.8
Glass and glassware, total	£416,597	£95,413	£108,245	£89,926	£50,211
Percentage from U. S. A.	1.09	2.8	3.4	4 6	7.9
" " Germany	2.2	14.8	19.5	12.8	17.9
" " Belgium	5.2	16.9	18.1	24.9	22.4
Arms, ammunition, &c., total	£11,710	£130,543	£128,456	£159,952	£104.997
Percentage from U. S. A.	4.05	3.4	6.6	11.4	8.1
" " Germany	2.7	10 09	5.5	4.5	3.6
" " Belgium	1.1	0.3	1.5	2.8	1.001
Cutlery, total	£60,012	£38,355	£.5,266	£42,807	£37,549
Percentage from U. S. A.	0.8	0.9	0.8	0.8	0.8
" " Ger. and Bel.	2.3	5.1	8.9	9.1	6.1
Hardware, total	£649,132	£621,350	£665,293	£634,689	£349,746
Percentage from U. S. A.	13.9	13.5	15 8	15.7	14.7
" " Germany	0.9	2.7	3.3	3.05	3.8
" " Belgium	0.5	0 4	0.6	0.4	0.2
Lampware, total	£37,851	£17,401	£19,135	£17,402	£15,380
Percentage from U. S. A.	27.6	24.2	40.08	38.9	23.1
" Bel. and Ger.	3.7	9.7	10.4	11.9	20.4
Machinery, total	£485,271	£510,731	£544,328	£308,911	£222,841
Percentage from U. S. A.	8 4	10.3	12.09	6.3	5.1
" " Ger. and Bel.	0.8	3 6	4.1	2.7	2.5
Iron and Steel, total	£1,218,476	£975,927	£1,441,378	£1,078,822	£773,575
Percentage from U. S. A.	0.2	1.03	0.2	0.7	0.8
" " Germany	1.8	7.2	5.06	7.06	3.4
" " Belgium.	3.6	5.1	4.6	0.09	6.8

The totals, it is stated, are nearly accurate, but the percentage of American and German goods is understated, since many of them were bought through British merchants and credited to England.

The opinions of various merchants are given as to whether competition is increasing or not. The reply of one is interesting. He says:

"American manufacturers are gaining ground in tools generally, among which axes, saws, shovels and files may be specified, and in fencing wire and ammunition.

"In tools the market is held by superior quality and finish, better packing, lower prices.

"Disston's saws are the only ones imported to any extent, and the market seems lost to English makers."

In answer to the question why British goods are being passed over in favor of foreign or American ones, the answers from all are unanimous—the German and American goods are "cheaper, better finished, more suitable for the market, better packed."

Another question was why Germans are gaining ground, and the answers to this intimately concern American exporters.

"German agents carry large stocks; they are active and look after

their customers; they will do business with many houses where English firms decline to; they will take more risks to get on the market, are more accommodating in making up special patterns, and make no objection or charges over small details."

There is in the above a very good rule for American firms to follow not only in extending their export trade in Australasia, but in any foreign country. We have from time to time noted the decreasing use of British products and the increase in exports from Germany and Belgium as well as from this country. Belgium has taken the lead, and unless our merchants take more active steps that country will secure all that Great Britain loses, as well as the natural increase from the development of foreign countries.

THE GOLD PRODUCTION OF AUSTRALIA.

In our issue of March 2d last our Australian correspondent, Mr. John Plummer, gave estimates of the gold production of Australasia. We have now received, through the courtesy of the Department of Mines of Brisbane, South Australia, the official statement of the gold production of the several colonies, with the exception of New South Wales, of which, however, we have a good estimate. The production in 1894 was as follows:

Gold product, 1894:	Ounces.	Value.
New South Wales (estimated)	223,000	£780,500
Victoria	673,680	2,694,720
Western Australia	207,131	787,099
South Australia	35,844	125,454
Queensland	679,511	2,378,288
Tasmania	57,873	202,555
New Zealand	221,533	886,132
Total ounces	2,098,572	£7,855,639

The value of gold is estimated at £4 per ounce for Victoria and New Zealand, and £3 10s. for the other colonies, in accordance with the values returned in previous years.

In all the colonies, except New Zealand, there was a gain in gold output in 1894. Victoria had the smallest increase, 2,554 ounces, while Western Australia had the largest gain, both in actual amount—96,953 ounces—and proportionally, the increase over 1893 being 88 per cent. In Queensland the gain was 79,184 ounces, giving that colony the first rank as a producer, which has heretofore been held by Victoria. Tasmania also shows a handsome gain.

New Zealand shows a loss of 5,248 ounces. The halt in production, there has been due rather to the difficulties attending the working of the ores of many of the New Zealand mines than in lack of ore. We have frequently referred to the causes for the increase in the Australian output and need not repeat them here.

The values given for the gold show that the average of the Australian metal is about 825 fine. At this rate, the production given above would be equivalent to 1,731,322 fine ounces of gold, or $35,786,426. This is very close to the production reported for the United States last year, which was 1,923,619 fine ounces, or $39,761,205—or the United States production exceeded the Australian by $3,974,779 in 1894.

The statistics of the Australian mints also show an evidence of the increase in gold production. At the Sydney mint the gross value of the metal received was £3,084,778, of this 617,139 ounces were in old coin for remelting; of the remainder, Queensland furnished the largest share, 559,299 ounces, New South Wales provided 222,988 ounces. The supplies from the other colonies including 44,855 ounces from New Zealand, 252 ounces from Victoria, 238 ounces from Tasmania, 113 ounces from South Australia, and 4,894 ounces from other countries.

At the Melbourne mint which receives the chief contribution from Victoria, the total quantity of gold received in 1894 was 1,061,523 ounces. Victoria furnishes 721,014 ounces, West Australia provided 199,904 ounces, South Australia 35,730, ounces and Tasmania 48,802 ounces. From the other colonies 327 ounces were received, the balance being made up of gold coin for remelting and gold from foreign countries. The total value of the gold coin and stamped bullion issued at Melbourne for the year was £4,171,480. Both mints show an increase over the preceding year nearly corresponding to that in production.

CONDITION OF THE IRON TRADE.

The advance which has taken place in the price of iron and steel products, has, without doubt, come to stay, and unless all present indications are at fault, further advances may be expected before fall. It is impossible to predict what may be the conditions after the autumn trade commences, but if the present industrial expansion continues we will then be on the verge of another boom similar to that of 1886.

On January 1st of this year we quoted Northern 2X at $11@$12, and Southern No. 2 at $10.25@$11.25. Pittsburg quotations were $10 for Bessemer and $9 for Gray Forge. In February the same quotations held. In the early part of March there was no change in New York prices, and in Pittsburg, while the same figures held, the market was much weaker, billets selling for $14.90. April showed the commencement of the change. The wages of coke workers had been advanced, and with them the price of coke and Lake ore. In Chicago there was an advance of 50 cents in pig. New York prices were stationary, as also were those in Philadelphia. Pittsburg showed a general stiffening, Bessemer selling up to $10.65 and Gray Forge to $9.25, while billets sold to $16 at mill. During the following week trade conditions became even stronger, and by May 4th had developed a steady business at advanced prices, and with prospects of a further rise. About this time various industrial establishments commenced advancing wages, and in our columns we recorded a long list where the advance had averaged over 10 per cent. At nearly all furnaces shipments were in excess of production, and in all markets prices were held firm and orders for following months were either declined or taken at advanced prices.

The most marked advance, however, is noted during the first week of June, when prices in New York were held at $11.50@$12 for Northern 2X and $11.25@$11.50 for Southern No. 2 foundry. In Pittsburg, Bessemer sold for $11.75, June and July delivery, and Gray Forge $10.40 Billets for June and July sold $17.50, and August $18.75.

On June 14th even these prices have been exceeded. Northern 2X selling for $11.50@$12, and Southern No. 2 foundry $11.50@$12 in New York, while in Pittsburg Bessemer sold $12.35 for July, August and September: gray forge $10, July and August. Telegraphic reports from our correspondent say billets have advanced to $19.

The advance in prices is established on a very much sounder basis than mere speculation. As shown in the following table, our weekly output has remained practically the same, a very slight increase being shown in coke iron, which is more than counterbalanced by the decrease in anthracite and charcoal:

Fuel used	Week ending June 15, 1894. F'ces.	Tons.	Week ending June 14, 1895. F'ces.	Tons.	From Jan. 1894. Tons	From Jan. 1895. Tons.
Anthracite	30	12,350	32	20,124	378,539	495,526
Coke	41	47,690	122	131,800	2,098,596	3,226,640
Charcoal	20	3,930	18	3,961	96,028	95,640
Totals	91	63,970	172	155,885	2,573,163	3,837,806

While all the returns have not been received of our reports on stocks, from those in hand it is apparent that there has been a decline of nearly one hundred thousand tons during the month. That is, about 12 per cent. of the amount in stock on May 1st has been consumed in addition to the entire output of all the furnaces during the month. Our present rate of production is 8,100,000 per annum, but the rate of consumption is over 9,000,000 tons per annum. With consumption about 25,000 tons per week above production, our present stocks would, if the output continued the same, last for only seven months, and if from unforseen strikes or other causes production should decline, our supply would necessarially be used up within a shorter period. In other words, our total stocks represent four weeks actual consumption if production ceased.

NEW PUBLICATIONS.

NYSTROM'S POCKET-BOOK OF MECHANICS AND ENGINEERING. By William Dennis Marks and Robert Grimshaw, Philadelphia, Pa.; J. B. Lippincott Company. Pages 675; illustrated. Price $3.50.

The 21st edition of this volume is like its predecessors, a book filled with valuable information, and so completely indexed that the information is readily attainable. One excellent feature which has been introduced here is that in the often used tables of circumference and areas of circles. Whereas these are usually two separate tables, in this volume they are brought together. A circle with an open center denoting the plane of circumference, and a circle with shaded lines denoting that of area. This is very convenient for reference. For instance, we can read with a circle 10 ft. in diameter has a circumference of 31·41 ft., and an area of 78·539 ft. The remainder of the volume follows generally the plans of preceding issues.

It is to be regretted that the publishers of such an important and useful hand-book as this did not pay more attention to the printing and type. Unfortunately the plates from which many of the pages have been printed are old and blurred, and while no cases are noticeable where a letter cannot be distinguished, still the volume lacks the neat and clean look which is the result of sharp type and good presswork.

COAL STATISTICS. Philadelphia, Pa.; published annually by Alder & Ruley. Pages 183. Price 50 cents.

The annual edition of this little volume contains as usual much interesting information regarding the coal measures of the United States and the coal mining industry of the various States. A valuable feature of the volume is the directory of coal mines in various counties in the States. Some interesting data is also given on the coal trade at principal ports and cities.

LENS-WORK FOR AMATEURS. By Henry Orford. London, England, Whittaker & Co.; New York, Macmillan & Co. Pages 231; illustrated. Price 80 cents.

With the great interest that has been displayed in photography during the past few years this little volume will not fail to meet a large number of readers enthusiastic over that study, and who will be interested not only in the knowledge of how a lens is made, but many of whom will follow the very clear instructions which have been given, and try the work for themselves.

The book is an excellent one both as to arrangement and in its clear ex-

planations of the tools required, the quality of the glass to be used, and the manner in which the work can be carried out.

The author has made it a point throughout to give simple methods which almost anyone can follow, and his explanation of the optical properties of various kinds of glass, particularly of the different lenses to which he refers is in every respect well done. He has taken the work up by showing first the methods used in preparing the lens, then describes the method of setting it, of making diaphragms and putting them in place accurately, the relation of the aperture of a diaphragm to the picture, the depth of definition of a lens, distortion, and what it results from, the depth of focus, and the reason why one lens is more rapid than another. Referring to lenses for magnifying glasses he describes how they are made, gives a very clear explanation of the different kinds of eye-pieces, and tells how to set them so as to obtain the results desired. Condensers are explained, polarization, the way to make small pocket lens or magnifying glasses, and indeed, all of the details which would be desired by the amateur until he had advanced far into the professional stage of lens manufacture.

The book is well printed and neatly bound, and will be found a useful and interesting addition to the library of any person interested in these subjects.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

South Dakota Geological Survey. Bulletin No. 1. A Preliminary Report on the Geology of South Dakota. 1894. By J. E. Todd. Sioux Falls, S. Dak.; State Printers. Pages 172; with map and illustrations.

Das Entwickelungsgesetz der Erde und der Erzlagerstatten. Von C. A. Hering. Dresden, Germany. Published by the author. Pamphlet. Pages 16.

The Rise of South Africa. By Albert Wirth. Deerfield, Wis.; Africa Publishing and Printing Company. Pamphlet. Pages 175. Price 50c.

Jahrbuch der Elektrochemie. Berichte uber die Fortschritte des Jahres 1894. Von Dr. W. Nernst und Dr. W. Borchers. Halle a. S., Germany; Wilhelm Knapp. Pages 274; illustrated. Price $3.50.

Cours Elementaire d'Electriciti: Lois Experimentales et Principes Generaux: Introduction a l'Electrotechnique. Par M. Bernhard Brunhes. Paris, France; Gauthier-Villars & Fils. Pages 268; illustrated. Price (in New York), $1.75.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

The La Belle Mining District, New Mexico.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: The name of this district has been on the tongues of many prospectors and capitalists of late as its developments have shown such good results that the camp is rapidly filling up and becoming well known. La Belle is situated in the Costilla grant, and embraces three camps, La Belle, Anchor, and Midnight, lying near the crest of the end of the Sangre del Cristo range in Taos County, New Mexico, about 75 miles southwest from Trinidad, Colorado, and nearly 60 miles southeast from Antonito, in the same State. The grant is chiefly owned by Holland capitalists, Mr. E. C. Van Diest, of San Louis, Col., being the manager.

The first location made on the grant was some time prior to 1870. The first regular prospecting, however, was not done until 1893, when some claims were located and have since been driven in good rock and are paying handsomely. There is a large amount of float rock found on the surface in this region, and prospecting is comparatively easy work. The mineral belt is roughly stated to be about 20 miles in length; a porphyry formation containing oxides and carbonates on the surface which will run into sulphurettes as it goes down. A feature of the district is the black oxide of iron, which occurs in the quartz, and usually carries free gold.

The Climax mine has been developed with a 200-ft. tunnel, which cut the main lead. This property is owned by the Climax & Golconda Mining Company.

Among the other mines operating are the following: Aztec, owned by Jack Young and "Uncle" Adolphus Garrison; Alta Vista, an extension of the Aztec; Belle of Mexico, owned by Garrison and Lafinier; Comanche Squaw, located by S. D. Gardner; Ethel H., owned by Henry Hervey and A. M. Ewing; Gold-Bug, owned by F. H. Forman and others: Jerry Simpson, owned by H. C. Gallaher, Frank Pierce and Messrs. Cutters and Chambers; Little Gold Nugget: Mammoth, owned by Hassinger, Floyd & Douthit: Montezuma, owned by Cotton and Van Diest; Ocean Wave and Carr Lode, owned by Charles Carr; Red Cross, owned by the Gold Jack Mining Company; Rosita, owned by Dr. Twitchell and M. A. Bryant; Silver Plume, owned by W. E. Howlett and L. H. Roberts; Trilby, owned by Zattu Cushing, and others; Wonder and Colorado, owned by A. G. Stith, F. A. Pine and F. P. Twitchell.

LA BELLE.

PROPERTIES OF GOLD SULPHIDE.

An interesting article by A. Ditte in "Comptes Rendus" describes experiments made on gold sulphide. The author says the action of a current of hydrogen sulphide upon a dilute solution of gold chloride varies according to circumstances. If the liquid is neutral the first bubbles of the gas occasion a brown coloration, which deepens as the current passes, and when it is saturated it gives no deposit of a metallic sulphide. The solution is then deep brown, transparent and passes through filters without losing any of its color. It was left in a closed vessel, at the ordinary temperature, and slowly modified.

The gold sulphide is transformed in the course of 24 hours, or longer. The liquid is still dark, but it is decolorized on filtration, or if left alone it slowly deposits gelatinous gold sulphide, which on agitation with water remains for a long time in suspension, forming a colored liquid. The addition of a few drops of hydrochloric acid to the dark solution which passes through the filters, or to that which holds the gelatinous precipit te in suspension, rapidly causes the deposition of gold sulphide in the form of a black powder, and the liquid becomes colorless. This condition is reached at once if a current of hydrogen sulphide is passed into an acid solution of gold chloride.

Gold sulphide may thus take very different aspects from the soluble matter produced in a neutral solution, or obtained, as by Schneider, on dialysing a solution of gold cyanide in potassium cyanide saturated with hydrogen sulphide up to the dense black sulphide insoluble in water. This sulphide, if brought in contact with an alkaline sulphide, occasions various reactions.

If we gradually add sodium monosulphide to the black insoluble gold sulphide it gradually dissolves, and an excess of alkaline sulphide gives an orange-red solution having the odor peculiar to solutions of the alkaline persulphides.

This solution, if slowly evaporated in a vacuum, deposits aggregations of crystals formed by colorless transparent crystals radiating around a point. If well dried on porous porcelain their composition may be represented by the formula $Au_2S,2Na_2S,20H_2O$. These crystals blacken on the surface under the action of organic substances. They are very soluble in water, forming a colorless liquid in which dilute acids give at once a precipitate of gold sulphide.

If the alkaline sulphide is only in very slight excess we obtain an orange-yellow liquid, which in a vacuum deposits fine needles of the double sulphide, $Au_2S,Na_2S,10H_2O$, and the mother-liquor on further concentration yields a supersaturated solution, which sometimes coagulates in a mass, and sometimes deposits small prisms, short, deliquescent, not containing gold, very soluble in water, yielding a yellow liquid in which dilute acids give an abundant deposit of sulphur. They consist of hydrated bisulphide, $Na_2S_2,8H_2O$.

Thus, on contact with sodium monosulphide in excess, gold sulphide passes into the state of aurous sulphide, Au_2S, which combines with the alkaline sulphide to form double sulphides, soluble in water without decompo-ition, while the sulphur set at liberty forms sodium bisulphide.

When gold sulphide is in excess a certain quantity dissolves, and then the undissolved portion decreases in volume, changes its color, and after some days is converted into a dense, dull, greenish-yellow powder, formed of very minute crystals adhering together and opaque. This substance contains no sulphur; it is pure gold crystallized in the moist way.

A solution of gold sulphide in an excess of alakaline monosulphide, with the addition of fragments of sulphur, gives rise to the formation of a deposit of black sulphide, which increases in proportion as the sulphur dissolves. Finally, the gold liberated does not give rise to any inverse reaction, for goldleaf left for 18 months in contact with a solution of sodium sulphide saturated with sulphur, at the ordinary temperature and in a sealed tube, is not affected by this liquid.

If for sodium sulphide we substitute that of potassium we observe analogous facts, but potassium sulphide gives rise to double salts much more soluble in water than those formed with sodium, and more difficult to isolate in a state of purity. If we dissolve gold sulphide in a very slight excess of potassium sulphide, we most frequently obtain a residue of metallic gold on operating in the cold, or at 30 deg. to 40 deg. The filtered liquid, if evaporated in a vacuum, becomes a thick red syrup, ultimately depositing crystals. The crystals may be freed from their mother-liquor by depositing them upon a plate of very dry porcelain protected from moisture. The crystals are gold-colored needles, very deliquescent, and very soluble in water, to which they give a yellow color. If exposed to light they turn gray on the surface, and their composition may be represented by $Au_2S, 4K_2S_2, 12H_2O$.

COPPER MINES OF THE PAMPA CENTRAL

By J. B. Ambrosetti.

The mines are situated 13 miles south of the Sierra de Lihue-Calel, and belong to the Sociedad del Mineral de la Pampa. The ore deposits were discovered by Mr. Thomas Bovadilla, who came from Chile, on the faith of an old parchment of the Jesuit Fathers, describing their itinerary from Valdivia to Paraguay. Much of the copper ore so far extracted had been sent experimentally to England. The surrounding country is a desert, covered with scrub, and the nearest water supply is from a well sunk at Pena Verde, 3¼ miles south of the mines. This yields slightly brackish but drinkable water. Rain water is stored in a pit of the Dos Chilenos mine.

The 18 mines which have been started are worked by means of shafts, out of which the ore is hoisted with the help of hand-windlasses and in adits following the course of the veins. From the adits the ore is laboriously brought out in leathern bags on the shoulders of workmen. In one working day a good miner is reckoned to drill and fire with dynamite six holes 8 to 12 in. long. Most of the veins are capped by a ferruginous layer, which serves as roof. Thus, at the Flor de la Pampa mine, the cupriferous vein, 10 ft. thick, is encased by ferruginous rock, whose contact-surfaces are perfectly smooth, and allow of the ore being detached without the slightest difficulty. The district is one of plutonic and metamorphic rocks. In the north crystalline mica schists occur, which, it is suggested, are the result of the metamorphism of granite by the intrusion of huge masses of quartz. The granite graduates into aplite and greisen. There are also quartzites cleaving vertically, sanidine-rholites and highly garnetiferous eclogites. Copper silicate is disseminated through the quartzite in impregnations, encrustations and veinlets, accompanied by specular iron ore. Copper also occurs in the form of auriferous and argentiferous oxides and sulphides. Assays made of ores taken from five mines show percentages of metallic copper varying from 3·92 to 7·40 (Dos Chilenos mine) and of silver varying from 0·0015 to 0·0095 (Flor de la Pampa mine). The complete analysis of a very rich sample from the Elisa mine gave the following result: Copper (as oxide and sulphide), 36·63%; silver, 0·0102%; and gold, 0.0010%. Mr. Franchy's

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theory of the genesis of the Lihue Calel copper silicate is that the copper originally existed in the form of pyrites. By decomposition of the portions nearest the surface, the pyrites were oxidized to soluble sulphates. The sulphates in solution entered into reaction with the lime silicates contained in the felspars of the adjacent rocks, producing silicate of copper, which was then deposited in the form in which we now see it. It may therefore be predicted that, as the workings are pushed deeper down, copper sulphides will be struck; and, in fact, this prediction has already been verified at the Dos Chilenos mine, where there is a shaft 115 ft. deep. Samples taken from 92 ft. down were rich in erubescite.

TIN MINING IN NORTH QUEENSLAND.*

By John Munday.

The township of Herberton lies about 160 miles north of Townsville and 50 miles southeast from the port of Cairns. Between Herberton and the coast a large extent of basalt country intervenes and in this section tin is found. It was first discovered in the granite hills of Tinaroo in 1878, and in 1880 prospecting was extended to Herberton. The Kangaroo Hills tin country lies 120 miles south, while north are tin-bearing ranges stretching toward Cooktown. From Herberton as a center, lode-mining has extended westward to Watsonville. Irvinebank, Eureka Creek and Koorboora, and southwestward to Coolgara, Glenlinedale and California Creek, covering a radius of nearly 40 miles. Alluvial mining has been carried on in the same direction from Herberton to the Tate River and Fossilbrook, a distance of over 80 miles. Within the same limits are developed other minerals of economic value, including lead, silver, copper, antimony and wolfram. The gold mines of the Hodgkinson, Mareeba, and the Russell lie to the north and east.

Near Herberton the preponderance of the outcropping tin-bearing rock is porphyry. Where seen in the deep ground this rock assumes a granitoid structure, and hornblende, at times, is present as a constituent. The decomposition of the felspar is characteristic, and streaks of sedimentary lime may be observed in some of the rock joints. White mica is not much present, there being a difference in that respect from the granite country to the west. Tourmaline is likewise rare, contrasting thus with the stanniferous rock at Cooktown. There are outcropping patches of granite, but their extent is limited.

The country is subject to what miners term "slides," normal and reversed faults both being encountered in the mines. It is also traversed by dykes of elvanite of varying thickness, intersecting the lodes at different angles. In two instances, at Herberton and Watsonville, where such dykes were driven through at 300 ft. from the surface, a clay seam was followed conforming to the strike of the lode, and the lode fissure reached on the other side, but the lode was not shifted nor was its course changed. In these instances, the dykes were not in themselves stanniferous, but tin was present in the lodes at a short distance from them.

Mr. R. L. Jack describes the tin producing veins of this district as metaphorphosed igneous dykes having probably a diorite origin, and at present consisting mainly of quartzose chlorite and quartzose serpentine. In deep ground these veins develop more quartz and present a greater resemblance to ordinary lode veins, the enclosed mineral being in a more banded form and parallel with the walls of the enclosing fissure. The strike of these dyke lodes is more or less meridional, but they have no uniformity in that respect, varying in all directions; nor have they in the direction of their dip, which is sometimes to the right and sometimes to the left, generally at a steep angle. In length they have been traced at the surface and underground several hundred feet. In width they vary from one or two to 25 ft. wide, and suddenly expand and contract.

The deposits of tin do not always take place in the chloritic mineral filling up the main fissure; but are sometimes found connected therewith as branch veins; and in such cases the matrix of the ore consists mainly of quartz, the chlorite element being less prominent. When the ore occurs in the lodes with the chlorite the stone is usually very good. The country rock adjacent to the lodes usually shows some evidence of change, its felspar element giving place to dark colored hornblendic mineral. Joints in the veins, and from the contiguous rock, generally favor the deposition of tin. The ore occurs as cassiterite, and mostly in lenticular deposits, varying in size from small pipes up to bodies the whole breadth of the lode, and reaching in length to 40 ft. and 50 ft., and in depth from a few up to several hundred feet. Their yield ranges from 5% up to 40% and over of oxide. Patches of iron pyrites appearing in the lodes are considered a good indication. Wolfram, fluorspar, galena and molybdenite also occasionally accompany the tin. Apart from such concentrated bodies the mass of the mineral constituting these chlorite lodes is for the most part poor in tin, probably not yielding over 1% of that ore.

The Great Northern mine, at Herberton, has been opened in two lodes of the kind just described, and has produced over 4,000 tons of dressed ore. In one of these lodes the ore shoot lasted down to a depth of 570 ft, leaving ore in thin seams still in the bottom. The shoot was found most productive between 100 ft. and 300 ft. from grass.

Numerous deposits of ore have been found in veins in the hills around Herberton; but, except those in which chlorite appears as an element, they have usually not been very productive.

West from Herberton toward Watsonville, over porphyry ridges, at a distance of about five miles, the main dividing range is crossed at an elevation of 3,650 ft. above sea-level. On the western slope is an outcrop of stratified rock, consisting of greywacke and shales. The North Australian mine is opened in this formation. In some of the shallow workings the tin is associated with rich carbonates of copper, and iron and arsenical pyrites. The deposits are irregular, and occur between bedding planes of the inclosing rock. There are faults in the locality indicating a course by which the tin probably arrived at the surface. The North Australian shaft is 200 ft. deep.

The principal other Watsonville mines are located on the summit, and on the northern flank of a portion of the main dividing range known as the Western Hill. The crown and northern slope consist of porphyry, and the tin-bearing veins are similar to those at Herberton: but the ore is more impregnated with copper and arsenical pyrites. Outcrops of some of the lodes yield small quantities of silver. The deepest mine is the T claim, in which the ore has reached a depth of 330 ft. from the surface. Several rich deposits of ore have been worked on the Western Hill Range, extending to a depth of 200 ft.

At Irvinebank, 19 miles from Watsonville, there is more lode-mining. The tin lodes occur here in sedimentary rock, which is understood to correspond with the greywackes and shales of the Montalbion silver country, four miles further on. The composition of the lodes is mainly chlorite, arsenical and iron pyrites. The Great Southern and Vulcan mines, in this neighborhood, have produced considerable quantities of ore, as have also several other mines of less importance. In the two referred to the ore deposits have taken the form of large shoots. The Great Southern shoot extended almost vertially from the surface of the ground down to 150 ft., in a massive state, covering a horizontal sectional area of from 600 ft. to 1,000 ft. At that depth it diminished in bulk, and dipped at a low angle toward the west. The Vulcan mine has been productive from the outcrop of the lode down to 300 ft., the ore shoot sometimes extending over an area as large as that of the Great Southern. In this mine bismuth in small quantities is associated with the tin. The Great Southern mine has yielded 1,321 tons, and the Vulcan mine over 1,900 tons of dressed tin.

Glenlinedale, about 10 miles to the south of Irvinebank, furnishes an instance where a large outcrop of tin-bearing stone was found at the junction of the lode with a strong elvan dyke. The country rock is schistose sandstone and shale. Granite becomes exposed about half a mile from the mine, toward the south. The principal constituent of the lode is a hard, dark colored, brittle quartz. The heavy surface outcrop, which covered a sectional area of 1,000 ft., was followed down to about 150 ft. in depth, when it broke up in a mass of vertical layers of sandstone. The yield of ore from the stone taken from this mine was 6%.

At California Creek, 28 miles beyond Irvinebank, to the southwest, cassiterite presents itself in lodes in the granite; but the ground is hard and the veins narrow. In the same neighborhood tin occurs in lodes in a bed of sedimentary rock lying between granite hills. Where the lodes crop out in the granite the ore is associated with quartz. In the stratified rock it comes chiefly with chlorite, as at Irvinebank. At Coolgarra, lodes have been wrought in the greywacke and shale, but granite appears over a large portion of the outlying country. At Koorboora the lodes occur in stratified rock, and at Eureka Creek in both stratified rock and granite. In the Tate district the country rock is granite. At Mount Borunda, in that locality, the ore is developed in floors of decomposing granite, which stretch along the outcrop of the lode. In this case muscovite forms a prominent feature in the staniferous matrix. None of the mines are much troubled with water. Shafts sunk in the sedimentary rocks encounter most water, those opened in the porphyry being comparatively dry.

When tin was discovered in the detritus from the lodes, the search for alluvial ore took an active form. Most of this class of ore is derived from open gullies. It is also obtained from drift now covered by rock of volcanic origin. Titanic iron at times accompanies the tin, but this takes place, more particularly, in some of the western country, and where the tin-bearing drift lies under decomposing basalt. Gem stones are likewise found.

South of the town of Herberton a large area of tin-bearing drift occurs under a sheet of basalt, having no doubt been brought there from the adjacent hills. It is chiefly worked by tunnelling from the Wild River flats, the tunnels serving for drainage and transit ways from the mines to the surface. Shafts sunk through the basalt to the alluvium go to a depth of 60 ft. In some places a sandy drift settles down between the stanniferous gravel and the volcanic rock, and in others the basalt lies close down on the wash itself. The ground mined over extends to a length of three miles, the most important portion of which, at Nigger Creek, seems to have formed the site of a small lake. The gravel varies in thickness from a few inches to three or four feet. The average yield of the gravel is about 50 lbs. of tin ore to the ton, or 2½%. The grain of the tin is generally well rounded, and the color gray. Grains of gold are found in this alluvium, but in no appreciable quantity.

Alluvial tin is worked in the gullies and creeks of the granite country between Herberton and Coolgarra, and in the vicinity of that township. Veins showing tin outcrop in the granite, but no mines of any importance have yet been opened in them. The California Creek granite country, and the Tate River and Fossilbrook granite and porphyry ranges beyond, are sources of stream tin. The Tate district has produced ore of this class during the last 13 years. Up to a recent period, the industry there was carried on by private enterprise, but a company has lately been formed, which is opening extensive races.

The quantity of marketable tin ore produced in the whole district from the discovery of the field in 1878 to the end of 1893, as obtained from official documents, was 24,845 tons. Of this 4,704 tons may be estimated as stream tin, and 20,141 tons as the result of lode mining. The districts of Herberton, Watsonville and Irvinebank have produced nearly equal quantities of lode tin, the preponderance being at the first two mentioned. The stone crushed has been about 140,000 tons, yielding a product of 14·4 % of black tin. The tin ore obtained has been worth on the average about £45 per ton on the ground.

After the stone is taken from the mines, it is usually subjected to a process of hand dressing before sending it to the mills. The yield of metal from the ore produced by the rock and alluvial formations in the district may be approximately stated as follows, the lode ore not having been put through any process of calcination: Herberton porphyry crushed lode ore, 69%. Irvinebank sedimentary rock crushed lode ore, 62%. Herberton porphyry deep lead alluvial tin, 73%. Herberton porphyry ranges alluvial tin, lode detritus, 71%. Tate and Coolgarra granite alluvial tin, 74%.

Until about a year ago it was the custom to crush and prepare all the lode tin for the market without roasting, the oxide being sufficiently clean to dress out therefrom a marketable product; but at Irvinebank, where the sedimentary rock prevails, calcination and lixiviation have recently been adopted, by which the volatile and soluble products are got rid of and the ore raised up to a value of 70% for metal.

Stream tin from the granite has mostly a ruby tinge, and has been ascertained to be slightly impregnated with nickel, iron and lime. The bluish-gray ore from the porphyry contains iron and lime, but the nickel is absent. Mr. Henderson, the Government analyst, in a recent report on the subject, considers that the difference in the color of the ore is not the

* Abstract of a paper read before the Australasian Association for the Advancement of Science.

result of chemical composition, but is more probably due to its deposition under different physical conditions,

At present there are in operation and in course of erection in the district five stamping mills of from 5 to 15 heads each. They are all driven by steam power, except the Bischoff mill, which is worked by a turbine, operated by water from the Walsh River. The mills are all of the usual type.

The process of dressing the ore varies in the different mills, but in all cases the advantage of hydraulic classification, and the cleaning of the rougher portion of the sand by the process of jigging, is recognized. The treatment of the slimes is different in different mills. At Herberton, convex and concave buddles are used. At the Bischoff mill, Watsonville, revolving tables are in favor, and at Irvinebank, Frue vanners and stationary round tables. "Dollying"—the process by which the last heavy slimes are eliminated, by mixing the ore in tubs, and subsequent percussion—is the last stage in the work of dressing. The dressed ore is then dried and put into bags of about 1 cwt. each, and sent to market.

At Irvinebank, the Irvinebank Tin Company has established a smelting furnace, at which most of the ore raised in that locality is smelted. The larger proportion of the product of the district has hitherto been exported to Sydney and smelted there, only a very limited quantity having been sent to England.

In the year 1893 there were 783 men employed in lode and alluvial tin-mining in the district.

METAL MIXERS OF THE NORTHEASTERN STEEL CO., LTD.*

By Arthur Cooper.

The Northeastern Steel Company's works were originally planned with the view of taking a portion of their requirements of iron in a molten state direct from blast furnaces, the remainder from cupolas erected adjacent to the converters.

A very short experience in the use of molten basic iron direct from the blast furnace convinced the company that they could not depend upon getting such iron sufficiently regular in composition for use in basic converters, and after a very short trial the use of iron direct from the furnaces was abandoned. Additional cupolas were erected, and for eight years ending December, 1892, cupola-melted iron alone was used from pigs made and supplied from six or seven different blast furnaces in the neighborhood. By a system of inspection and sampling of each delivery of pig, and a careful admixture of the different grades, fairly uniform results were obtained, but, notwithstanding every care, there were at times slight irregularities in the product of the cupolas, due to their irregular working, for, although the iron charged was mixed to average a certain standard composition, it frequently happened that the molten iron from the cupola varied considerably in silicon and manganese, larger quantities of these metals being oxidized at one time than at another. These slight irregularities gave more or less trouble, and required more or less care and attention in the subsequent conversion of the iron into steel. This was the position when the metal mixer was first brought under the author's notice by Mr. David Evans (at that time general manager of the Barrow Hematite Steel Co., Limited), who had recently erected at the Barrow Works a mixing plant for use in their hematite process.

About this time Mr. Massenez, at the Hœrde Works in Westphalia, demonstrated that, by the use of mixers he had there erected for the basic process, a large reduction of sulphur took place, provided the molten iron contained 1 per cent. and upward of manganese. He also satisfied the author that great regularity in the composition of the iron could be obtained from the mixer when working on molten iron direct from blast furnaces.

Soon afterward a mixer was erected at the Northeastern Works of 150 tons capacity. The form of the vessel adopted was that in use at Hœrde, but the arrangements for tilting it were somewhat different. Instead of a hydraulic cylinder fixed underneath the vessel, as at Hœrde, the plan designed by the Northeastern Steel Company provided for fixing the hydraulic cylinder overhead, the piston-rod of which is attached to a crosshead coupled up to each side of the back end of the mixer by long links. This arrangement was devised because it was considered to be safer in case of a break-out than the hydraulic cylinder placed underneath.

The plant originally included: one mixer vessel, as described; a weighing machine, on which the ladles of molten iron could be weighed before their contents were tipped into the mixers; another weighing machine under the mouth of the mixer for weighing the molten iron as it was poured into the ladle, the beam of this latter machine being placed on the upper stage, close to and well in sight of the attendant, whose duty it is to tip the molten iron into the ladles.

The objects the company had in view in putting down this plant were to increase their supply of molton iron in order to meet the gradually increasing demand for basic steel without adding to their cupola-melting plant, and at the same time to correct the irregularities in cupola-melted iron, the intention being that the product of five blast furnaces in the immediate neighborhood of the works should be passed through the mixer to the converters, and the remainder of the molten iron required would be supplied by cupolas. At first, blast-furnace iron only was used in the mixer in quantity amounting to about 2,000 tons per week, and this was treated separately in the converters (i. e., independently of the cupola iron); then the ladles supplying the converters were filled half with mixer iron and half with cupola iron, but after a very short trial it was apparent that the most regular and by far the best results were attained by passing the cupola iron also through the mixer. It was likewise clear that this was beneficial to the working of the mixer itself, as from the first trials the 2,000 tons weekly of blast-furnace iron appeared to be barely sufficient to keep the heat in the mixer high enough to maintain the slag in a fluid state—a condition absolutely essential to successful working. These early experiments were so encouraging that an additional mixer was at once erected, the same in every respect as the first one, so that with two vessels the lining of one could be repaired while the other was working, and in order to save labor and time in discharging the ladles into the mixer, a small pair of engines and shafting were fixed on the wall at the back of the two vessels, by means of which, and an endless rope of spun yarn placed upon a grooved pulley on the ladle-gearing, a ladle containing about 14 tons of molten iron is tipped in less than one minute.

For several months the lining was made solely of fire-brick, and when it had worn to thin (generally after some six or eight weeks' work), it was replaced with an entirly new one, but during the last twelve months it has been the custom to repair the worn parts with ganister, just as acid converters are repaired, and by this means the cost of lining has been considerably reduced. The charging of the mixer is commenced soon after Sunday midnight, so that it may be full when the works start at six a. m. Monday and it is a rule not to draw upon it at such a rate as to reduce the quanitity of molten iron in the vessel below about 80 tons, until Saturday morning, when it is emptied, and if no repairs are then necessary the mouth is bricked up, and the cover over the charging hole is made air tight with fire clay. By these means the vessel is kept almost red hot until the following Monday morning.

It is of the greatest importance that, when working, cold air be excluded as far as possible. This is effected by means of a close-fitting sliding door, lined with fire-brick at one mouth, and a plate cover over the charging hole.

It must not be thought that a mixer will cure all the ills which beset a a steelmaker; that by its use inferior and unsuitable iron can be made into good steel at a reduced cost. Such is not by any means the case. If very gray or very common white iron be admitted, it is almost certain that several casts of inferior steel will follow. It must also be remembered that there are certain charges to be defrayed, such as royalty, labor, maintenance of plant and tools and haulage of molten metal, which together amount to a considerable item per ton of finished product. Still, notwithstanding this, there are certain great advantages to be derived from the use of mixers, for, if ordinary care be taken to exclude extremes. i. e., iron which is too gray or too white, as would be done if the iron were taken direct to the converters, very regular results can be obtained from blast-iron furnace alone; but if into this is poured, at regular intervals, about equal quantities of cupola iron melted from carefully mixed pig, such as is done at the works in question, a converted metal can be made upon the cupola or blast furnace. Lastly, by use of the methods above described, the weight of each individual charge from the mixer can be controlled within a few hundredweight with far greater certainly than is practicable when each charge is tapped separately from a blast furnace or cupola, and thus, with an almost absolutely constant weight of charge in the converter, carburizing can be effected with much greater precision.

*Abstract of a paper read before the British Iron and Steel Institute, May, 1895.

POINTS IN COMMERCIAL LAW.

Prepared for the Engineering and Mining Journal.

An oral contract between the members of a copartnership to convey real estate belonging to the firm from one partner to another is void.

A creditor cannot recover possession of goods transferred by his debtor, with intent to defraud creditors, from a purchaser in good faith without first refunding to such purchaser the price he has paid for them.

One employed to sell goods on commission, paying his own expenses, cannot employ others to assist him and render the employer liable for the expenses of such other parties, who must look to him for their compensation.

Between co-sureties there should be proportionate equality of burden, and one who has been compelled to pay the whole debt, on account of the insolvency of the principal, has a right in equity to compel his co-surety to pay his equitable equal part.

Where, under a lease reserving a right of entry for nonpayment of rent, the lessor accepts payment in advance of a part of the monthly rent, he waives his right to insist on a forfeiture of the lease during the period covered by such part payment of the rent; receipt of money gives right to occupy.

Whether an agent is created by a solemn power of attorney under seal, or by mere parol agreement, he is equally an agent, when acting within the scope of the power conferred upon him. The form by which it is conferred concerns, in this respect, the method by which his authority is established, rather than its extent.

Where a vendor takes a mortgage on goods sold, and stipulates in it that the mortgagor shall deliver to him the notes and mortgages derived from sales of the merchandise, an agreement by the mortgagee to release the mortgagor from the performance of the stipulation is not invalid as to other creditors, in the absence of notice to the mortgagee of the existence of such other creditors.

A purchaser who has paid the freight and receipted for a car of goods is not bound to accept and pay for them if they were unmerchantable when shipped, or became so before arrival, because of the negligent manner in which they were packed by the seller, where there was no opportunity to make such an examination of the goods as would disclose their condition until the car was delivered and was being unloaded.

It is well settled that an exclusive right may be acquired in the name under which a business has been carried on, whether it be the name of an individual, a partnership, or a corporation; and it will be protected against infringement by another who assumes it for the purpose of deception, or even when innocently used, without right, to the detriment of another; and this right, which is in the nature of right to a trade mark, may be sold or assigned.

The mere insolvency of a corporation is not enough to authorize the appointment of a receiver at the suit of its general creditors; but when it clearly appears that on account of such insolvency, and the misconduct of its officers, the corporation is no longer able to proceed with its business, or its assets are in process of being fraudulently misapplied, to the injury of creditors, who are without other adequate means of relief, it becomes the duty of the court to appoint a receiver.

FURNACE DEVELOPMENTS IN THE BIRMINGHAM DISTRICT.

At the recent meeting of the Alabama Scientific and Industrial Association held in Birmingham, Dr. Wm. B. Phillips, the retiring president, delivered an interesting address, in which he referred to the tendency in the Birmingham district toward the purchase of blast furnace materials on analysis, and incidentally the sale of pig iron on the same principle. The purchase of some blast furnace materials on analysis has been the practice here for some years, but with the exception of some kinds of brown ores and limestone the analysis basis has not been in general use. The depressed condition of the iron trade during the last two years has brought about a demand from consumers that more detailed information concerning the composition of the different grades of pig iron shall be furnished by the seller. Variation in the nature of the stock results in variation in the nature of the iron, and when there is so slight a margin of profit, as has been the case here for quite a while, accurate grading becomes a necessity.

If any one thing has been proved during the last two years in this district it is that the old method of grading by color, strength, granulation and face can be depended on only if the stock remains the same and the burden uniform. With fast driving and large outputs this becomes more and more difficult and our furnace men have to choose between increased make with irregularities in the composition of the iron and restricted make with closer inspection of the product. Rogers, Brown & Co., of Cincinnati, one of the largest firms engaged in the pig iron brokerage trade, have recently established their own laboratory for the use of their customers, in order to satisfy them as to the quality of the iron sold. Dr. Phillips did not think that the Southern furnaces could afford to neglect this marked tendency of the trade, as it seems to him to be a permanent feature of the iron business and not a mere fungus, thriving on the hard times.

Another very interesting part of the address was the brief mention of the methods proposed for the concentration of the low-grade soft ores of the district. There is a very large amount of ore that carries so much siliceous matter as to render it useless for the blast furnace. It can be mined cheaply, and if some method of concentration could be applied it would double the available ore supply.

Of the two methods proposed, by washing and by rendering the ore magnetic and then separating the sand over a magnetic concentration, Dr. Phillips spoke more particularly of the latter, as he had been at work on it the last two years. A little more than two years ago Messrs. McCormick and Barton noticed that soft ore became magnetic when raised to red heat and exposed to the action of coke oven gases, and it occurred to them that in some way this principle could be used for the concentration of the low grade ores here. Dr. Phillips said that his own connection with the process had been to study it in all its details and to ascertain if it could be used commercially. After numerous experiments in the laboratory and in a small kiln erected at Ensley, the Tennessee Coal, Iron and Railroad Company had agreed to erect a kiln of 120 tons capacity near the Little Belle furnace, Bessemer. This kiln is of the Davis-Colby type, with modifications to suit the purpose in view, and is now in successful operation. Ore carrying 45% of iron and 36% of sand is now being transformed into ore carrying 60% of iron and 13% of sand, and is being delivered to the machine in quantities of 75 to 100 tons per day of 24 hours.

The various details of the process are being most carefully studied, such as the nature of the producer gas used in magnetizing, the temperature best suited to the end in view, the size of the ore that should be charged into the kiln, the length of time necessary for the completion of the reaction, and other things that seem to modify the conditions of uniform and successful work.

THE SAN CARLOS COALFIELDS.

Mr. James M. Hamilton, of El Paso, Tex., furnishes us with the following description of the San Carlos coalfields, in the county of Presidio, Texas. The fields are 26 miles south of Chispa, a station 144 miles east of El Paso, Tex., on the Southern Pacific Railway. This coalfield extends from northwest to southeast between the Rim Rock range of mountains, parallel with the river and railroad, and the Rio Grande River, which here forms the boundary between the United States and Mexico. The average width of the Texas area is eight miles. The total area of this coalfield has not yet been determined. Whether it is a continuation of the Sabinas Coalfield or a separate and distinct basin is a question of the future. Examinations have been very limited and but little is known of the Mexican side.

The Rim Rock Mountain on the Texas side is capped with a basaltic overflow over 200 ft. thick, and this capping is 2,000 ft. above the coal croppings. The valley is broken up by high ridges of hard red sandstone, conglomerate and basaltic rock at a much lower altitude than the Rim Rock but occuring in the same order. Isolated peaks of different heights are of frequent occurence and enclose deep canons and immense slips of the rock strata running generally towards the center of the valley. The principal developments of coal have been made on the steep mountain side and on the lowest exposure on the side of a long canon running into the Rio Grande River. At this point a shaft has been sunk 485 ft. deep and preparation is going on to work the seam which is over 4 ft. thick. Hoisting apparatus to raise 300 tons per day will be ready by the first of next year, and it is expected to make the mines a much greater producer as soon as practicable. The coal makes a fair coke and much of it is equal to the best Pittsburg product. No great improvements can be made now, but as soon as the railroad branch is completed extensive operations are contemplated. The coal branch is being pushed ahead actively. The steel is laid out half way and by October 1st the cars will reach the mines. The San Carlos Coal Company is doing all this. The coal is conspicuously free from fossils. There is but little water found and not much gas. Water will be scarce for a long time until a new source is found. The Rio Grande goes dry and stays dry for months. At the present time the Southern Pacific road in this country has to depend on their tank cars. Borings in places to the depth of 1,000 ft. failed to find water for economic use.

CORUNDUM DEPOSITS OF GEORGIA.*

The corundum deposits occur in a belt in the fully crystalline rocks which enters the State of Georgia from the southwestern corner of North Carolina and the northwest side of Carolina and pass through Alabama about midway of the Georgia boundary, having their line of strike toward the southwest at about an average of 35 or 40° west of south. The dip is sometime vertical, but generally sharply inclined toward the southeast. The rocks making up the formations in this crystalline area belong to eight distinct types. Three of these limestone quartzite and slate are plastics. The granite, gneiss and schists overlapping these plastics are completely crystalline. The other two are presumably of eruptive origin and may be designated as peridotite and metamorphosed diorite or hornblende gneiss. Mr. Francis P. King, the assistant, who made this report assigns the age of the rocks provisionally to the Algonkian period, but intimates that a more thorough examination may result in assigning a portion of the rocks in this area to the Archaean. All the corundum deposits thus far observed in Georgia occur in basic magnesium rocks, whose type has been given as peridotite including chrysolite, anthophyllite, serpentized chrysolites, schistose chlorite, and steatite or soapstone. The corundum occurs sometimes in veins having practically parallel walls, but usually in lenticular pockets. The matrix of these deposits differs not only in different but in the same locality. Four types have been noticed, viz., 1, lime-soda feldspar, with quartz and phlogopite; 2, lime-soda feldspar with actinolite; 3, a coarse grained aggregate of lime-soda feldspar and a black hornblende. Margarite is sometimes present in place of the feldspar. 4. A massive vein made up of a light grass green amphibole, limestone feldspar and a little chlorite. All the varieties of corundum have been found in Georgia with the exception of emery, the principal being the non-transparent variety of the corundum species. In color, shades of red and light to dark blue ore common, pink, gray and blue predominate and these colors often occur in the same specimen. White corundum is rare and shades of yellow and brown have not been observed.

The localities in which the corundum deposits have been found and worked on a commercial scale are Rabun and Union County. In the former is located the Laurel Creek mine, discovered in the early seventies, in which operations were carried on spasmodically until 1893. About the time operations were abandoned, because of a cave-in, it is claimed that at a depth of 130 ft. a vein averaging 8 ft. in width was being worked. Three types of rock are represented at Laurel Creek: 1, gneiss; 2, hornblende gneiss; 3, peridotite (chrysolite, with a little chromite. Chrysolite more or less serpentized, and associated with chromite. Anthophylite.). In Union County the Track Rock mine is located on the south side of Track Rock gap in the northeastern portion of the county. Development is confined to a tunnel which enters the magnesium from its eastern side penetrating about 200 ft. and branching out at several points. Preceding the financial troubles of 1893, several tons of corundum were cleaned and shipped to the mills of the owners, New York Corundum & Mining Company. The formation differs considerably from that of the Laurel Creek Region, being apparently made up of talcose-chlorite schists to the complete exclusion of chrysolites. Among the rocks taken from this mine is a dark green, finely granular rock, which was supposed to be massive chlorite, but a thin section examined under the microscope shows it to be chrysolite which has undergone great alteration. These are the only two properties which have been worked on any extensive commercial scale in the State. Discoveries of this mineral have also been made in the following counties: Towns, Lumpkin, Habersham, Hall, Forsyth, Cobb, Paulding, Douglas, Troup and Walton. Discoveries have been reported at various times from other counties along this same belt, and such are mentioned in the Bulletin, but they are referred to as possessing but little commercial importance.

In the preparation of corundum it is necessary to free it from the accompanying gangue. For this purpose a crusher is used if the gangue is hard, and the material afterward washed in a series of sluice boxes or in a revolving washing cylinder. This method of washing was devised as an improvement over the former method by the Track Rock people. The cylinder is barrel shaped, about 10 ft. long and 6 ft. across the widest part. One end has an open neck attached to permit the shoveling in of the material while the cylinder is in motion. Into this end also a steady stream of water is introduced by means of a pipe. The opposite end of the cylinder is covered by a wire screen. A trap door permits the ready removal of the corundum unclean. The corundum at Track Rock mine, because of a hard zone of margarite around it, has to be treated in another machine, which contains two disks armed with lugs or teeth, which are revolved with great rapidity. The covering of the corundum is worn off completely. For final preparation for the market a further washing, followed by a series of crushings, siftings and sizings, is resorted to and the material graded as desired.

A Water-Power Bridge.—A plan is on foot in Buffalo, N. Y., to erect a bridge across the Niagara River and beneath it to place a series of undershot water wheels, which would be used to drive dynamos which would furnish light and power to the city.

Cause of the Mine Explosion at Hohenegg, Austria.—The recent explosion in the Archduke Albert mine, at Hohenegg, Austria, which was at first attributed to fire-damp, now appears to have been one of coal-dust, detonated by the firing of dynamite. Not satisfied with the meagre details reported as to the accident, M. Francis Laur wrote to the manager of the mine, and received a reply, of which the following is the substance: The accident at the Hohenegg mine is due to the explosion of 100 dynamite cartridges, which set up a whirlwind of coal-dust, present in large quantity, and ignited it. Whether the dynamite was fired by chance, or through the fault of the fireman, cannot be determined; but it has been ascertained that he heated several dynamite cartridges at a safety lamp an hour before the accident.

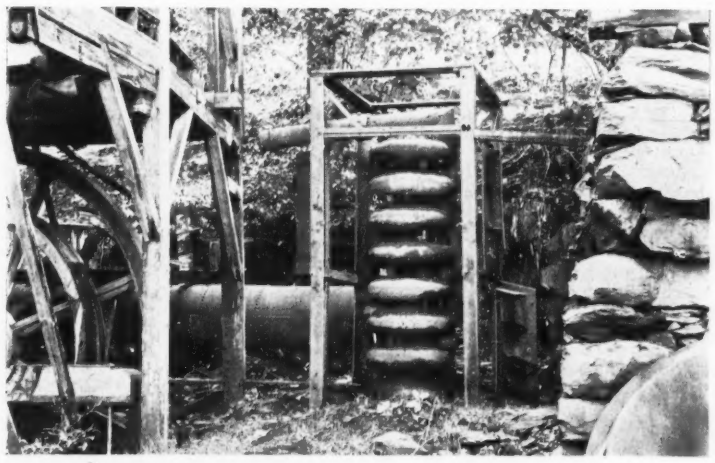
*Abstract of Report by State Geological Survey.

EARLY IRON MAKING IN NORTH CAROLINA.

Written for the Engineering and Mining Journal by J. D. Kase.

The history of iron making in North Carolina is dated from before the Revolutionary War, and examinations of the iron ore deposits in the central portion of the State present many interesting relics of the early efforts in this direction. One of the earliest furnaces in the State is at Ore Hill, in Chatham County, and is shown in the accompanying illustrations from photographs taken by a member of the editorial staff of the "Engineering and Mining Journal."

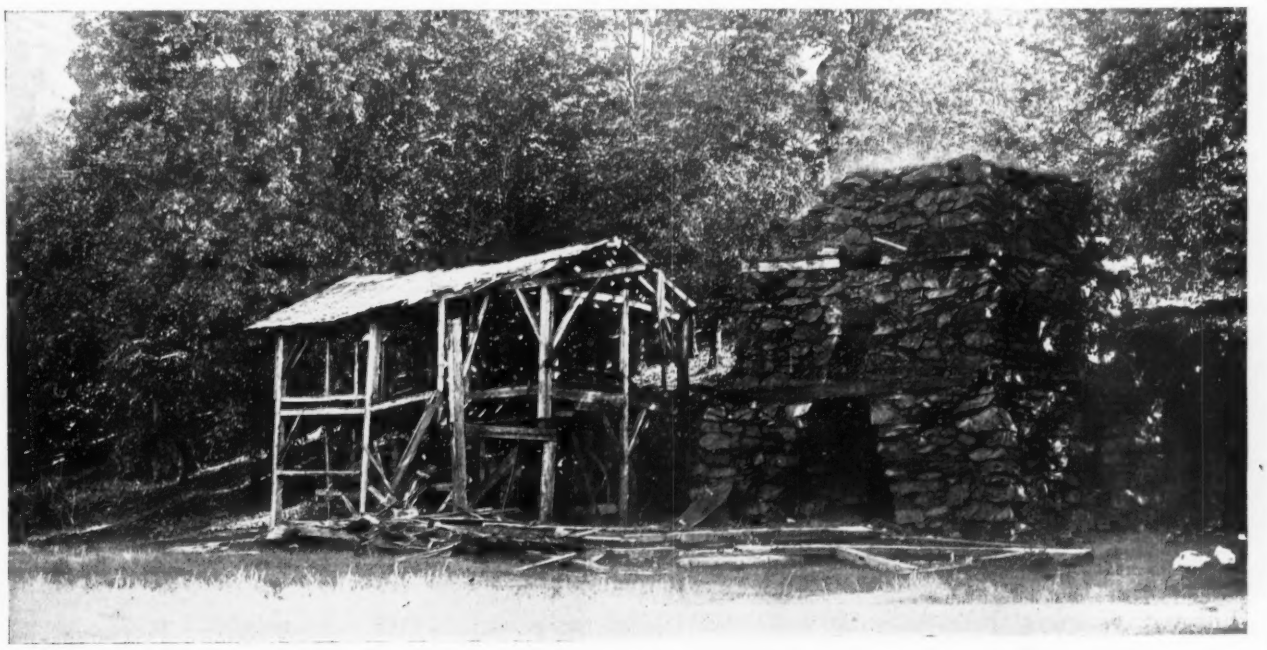
Sapona furnace was built some time prior to 1740, but at just what date is not known. Previous to the date given a committee was appointed by the Colonial Legislature to select a location and establish an



IRON HOT-BLAST STOVE, SAPONA FURNACE.

iron furnace to manufacture hollow-ware, agricultural implements, etc. This committee after diligent search found what was then supposed to be a hill of iron ore on Ephraim's Creek, which empties into a Deep River, and there erected the plant, naming it Sapona, the Indian name for Deep River. This location was about one-half mile below the site of the present Sapona furnace, shown in the illustration, laying on the eastern end of Ore Hill, and was operated by water power. There is nothing left now to designate this spot excepting a little slag and a small mound under which probably lie the stones of the old plant. History gives no idea of the extent of the works, nor the amount of their product. All that we know is that during the American Revolution cannon balls were made there and transported in rude barges down the Deep River to points on the Cape Fear River where the American army was camped.

After peace was declared Catalan forges were built and operated through the State supplying the forge iron required. Nothing further is known of the old Sapona furnace. In 1858 Messrs. Newland, Cyrus Mendenhall and others erected and operated the present furnace, manufacturing iron until 1862. In the early part of the last named year Messrs. J. C. and George Washington, James E. Hoyt and William Murdock formed a company known as the Sapona Iron Company, purchasing the property and adding a hot blast, shown in the illustration, and also increasing its steam power. This company operated the furnace, supplying foundries that had been established in the surrounding towns, and in the early part of 1863 entered into a contract with the Confederate Government by which the latter took the greater part of the output of the furnace, shipping the product by way of the Deep River to the Government arsenal at Fayetteville, on the Cape Fear River. The balance of the furnace product found a ready market at the shops of the several railroads in the State, and was used in the manufacture of locomotive tires. During the course of the war the property was captured by the Union forces and partially dismantled. The furnace was built of stone, 28 ft. high, with a 8 ft. bosh, the hearth and lining being of sandstone. The blast passed through a small iron coil stove and into the furnace by one tuyere. The blowing engine was of the old horizontal type, with a single steam cylinder geared to two horizontal iron blowing tubs, 44 in. in diameter by 48-in. stroke. The total output was about 5 tons per day.



SAPONA FURNACE, ORE HILL, N. C.

TREATMENT OF PYRITOUS CONCENTRATES BY CYANIDE.*

By A. T. Crosse.

Among those not thoroughly conversant with the cyanide process, the idea is prevalent that if the free acid can be neutralized, then the chief source of the decomposition of the cyanide is removed. Such, however, is not the case. I made a series of experiments on a ton of concentrates that contained 7 oz. 3 dwt. fine gold per short ton, and when washed with water, the wash water contained no iron or free acid, but decomposed a large amount of cyanide, owing to the presence of an insoluble basic ferric sulphate. I treated 1,000 grms. with dilute hydrochloric acid for two days (1 acid to 10 water), and after washing I obtained in the solution 2·62 grms. of iron as ferrous chloride and 2·33 grms. as ferric chloride. There were also 2·31 to 3 grms. in the solution, and a trace of copper. This iron taken up by the weak acid had been in the state of basic-ferric sulphate, and though not soluble in water it is acted on by a weak cyanide solution, giving rise to complicated reactions. Ferrous sulphate and cyanide of potassium form, in the first instance, ferro-cyanide of potassium; but if any free acid be present, this ferro-cyanide is converted into Prussian blue if ferrous ferric salts are present. Ferric sulphate, like ferric chloride, is decomposed by cyanide of potassium into hydric cyanide and ferric hydrate. Knowing the reason for the undue decomposition of cyanide by material containing partially-oxidized pyrites, the remedy would at once occur to anyone—namely, treatment with some cheap acid such as sulphuric or hydrochloric. I tried experiments with both, which were equally successful, and give the result of one of them. I started two experiments—side by side—under identically similar conditions, except that in experiment No. 1 the concentrates had been digested in weak hydric chloride and well washed. In experiment No. 2 the concentrates were treated in the natural state. In both cases I used 2 grains of cyanide of potassium diluted. After six days' treatment, No. 1 gave a decomposition of cyanide equal to 0·66 grms.; No. 2 gave a decomposition of cyanide equal to 2·84 grms. or 5·3 times as much.

I had to add more cyanide to experiment No. 2, when the 2 grms. first added were decomposed. No. 1 had yielded up 84·3% of its gold, and No. 2 only 51·8%. I have also made a series of experiments with hyposulphite of soda, as basic ferric sulphate is converted into soluble ferrous sulphate by this salt, but these experiments were only partially successful. I tried an interesting experiment on some concentrates from the Jumpers Gold Mining Company last November. These concentrates contained about 3 oz. of gold per ton and about 60% pyrites and some basic ferric sulphates. After treating with acid and washing well, I proceeded as follows: 1,000 grms. were taken; I leached with 1,000 c.c. 0·3% solution of cyanide, and I arranged it in such a way that the filtrate dropped into a Woolff's bottle of oxygen, which was forced by the filtrate, bubble by bubble, through the cyanide solution. After passing the solution through three or four times a day for six days, I had an extraction of 93·5% of the gold, and had used 0·5 grs. of cyanide, or about 1 lb. per ton.

Any method leaving ferrous or even ferric hydrate in a freshly precipitated form in the concentrates would not answer, as cyanide of potassium

* Abstract of a paper read before the Chemical and Metallurgical Society of South Africa.

takes up these hydrates to form ferro or ferric-potassic cyanide. There is an interesting fact in connection with ferric hydrate—if you subject it to a temperature of 121° C. for some time in water under pressure of one atmosphere, you dehydrate it to a certain extent, and then it has no action on cyanide of potassium. I tried various experiments to utilize this fact, but they failed, as I still had the ferrous hydrate to think of; but this effect of heat led me to trying the effect of heating the concentrates to a still higher temperature, and after various experiments I was very successful, as I converted the insoluble basic ferric salts into soluble ferrous salts and ferric oxide, by merely heating the concentrates till sulphurous acid was given off.

The best method of treatment is the following: The concentrates are heated on an iron plate or some other suitable arrangement to a temperature just below dull red heat. After cooling they are put in a vat, and thoroughly well washed with water. The washing must be continued till no iron is found, by testing the wash water with potassic ferric cyanide. Then give a wash with lime water. The subsequent treatment with cyanide can be carried out in the usual way, though it is advisable to have the solution slowly percolating all the time. I may state that concentrates treated in this way leach very easily, and that I got about 88% of the gold dissolved in 14 days. Of course, the question arises, which method would be advisable for a mine to adopt? Would it pay better to sell 3-oz. concentrates to a chlorination work, or treat them at the mines on the plans I have described? I have not the slightest hesitation in saying that for 3 or 4 oz. concentrates the cyanide process would pay much the better of the two; though the extraction might be rather less, the saving in cost of treatment would be very great.

I am enabled, by the kindness of Mr. J. R. Williams, to give the results of five months' treatment of concentrates obtained by using spitzkasten. The concentrates from Frue vanners cost from 17s. to 30s. a ton to win, whereas the concentrates obtained by spitzkasten cost under 1s. a ton. These latter concentrates are very easy to cyanide, as they leach very well, and have had no chance to oxidize, and, therefore, decompose very little cyanide. Details of results of cyaniding concentrates at the Crown Reef Gold Mining Company (Limited):

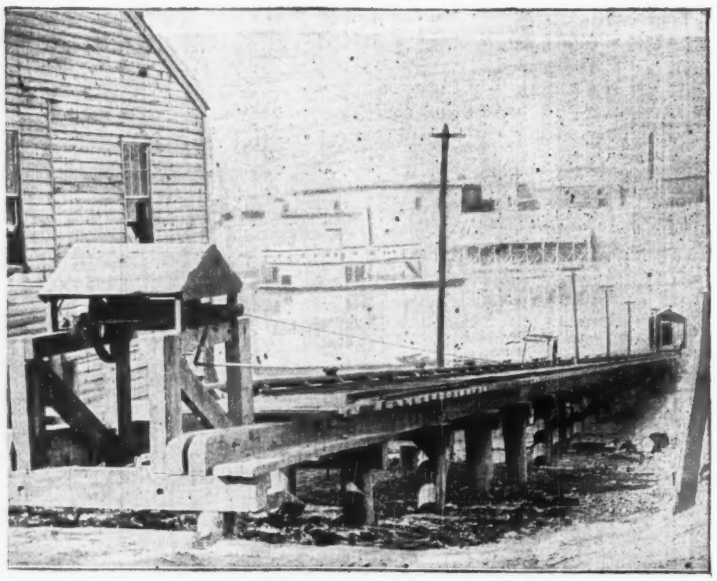
	Assay value Dwts.	Theoretical extraction Per cent.	Actual extraction.	Cost. s. d.
1894.				
October	23	90·21	73·14	8 11
November	18·27	89·76	84·92	8 0.7
December	17·00	91·17	91·13	8 03.
1895.				
January	15·25	91·89	91·67	7 3·3
February	13·75	89·09	87·86	7 11·88

Time, 13 days' treatment, and about 1·25 lb. of cyanide was used per ton of concentrates treated.

AN ELECTRICAL PUMPING PLANT.

A novel electrical pumping plant is shown in the accompanying illustration of an installation at Monroe, La.

The great variation in height of water in the river rendered it necessary to have a changeable location for the pumps in order that the suction-pipe should be always sufficiently submerged. With this end in view a railway reaching well into the river at low water was built. Upon this railway, mounted on a four-wheeled truck, a pump house was constructed. This house contains an 8 × 10 in. triplex power pump, made by the Goulds Manufacturing Company, driven by a 15-H. P., slow-speed Westinghouse electric motor.



ELECTRIC PUMPING PLANT AT MONROE, LA.

With the rise and fall of the water the position of the pump house on the railway is changed by means of the windlass shown at the head of the railway. This view shows the pump house at the lower end of the railway, the water being low.

Necessarily in such an installation as this provision had to be made for connecting the pumps and discharge pipe and this has been accomplished, as may be seen, by extending the main the entire length of the railway and putting flanged tees at regular intervals.

At these points the connection between the pump and main is made. In order to supply the necessary current for operating the motor a pole line was erected alongside the railway. On this are strung the wires which carry current to the motors.

This electrical pumping installation is the property of the Monroe Water and Light Company, from whose central station the current for the motors is obtained. In spite of the conditions under which the pump is operated and the frequent changes of the pump house it had been quite satisfactory from the start.

ORIGIN OF COPPER ORES IN TUSCAN SERPENTINE.

Mr. B. Lotti, in the Zeitschrift fur praktische Geologie, gives a description of these ores from which we have taken the following information:

In Tuscany, under the heading "serpentine" or "ophiolite," are included (1) serpentine proper with its parent-rock, lherzolite: (2) gabbro or euphotide, and (3) diabase. These are all of eruptive origin and of Eocene age; they occur in close association one with the other, and always preserve the same relative position, the diabase being on the top, the gabbro below it, and the serpentine and the lherzolite lowest of all. Moreover, the gabbro is seen in places to cut through the serpentine rock, and the diabase cuts through both, wherefore the author infers that these rocks are the product of two closely successive eruptions.

The commonest ores are iron and copper sulphides; blende and galena seldom occur. Magnetite, as in the Isle of Elba, is common enough, but not in workable quantities.

The copper ores occur chiefly in the gabbro, dispersed in small particles through the mass of the unaltered rock, or forming lodes in its fissures. More frequently they are found in spherical masses, of diameter varing from a few inches to 3 or 4 ft., in a steatitic matrix, which is the decomposition-product of the gabbro.

In accordance with Prof. Vogt's views on the differentiation of eruptive magmas, the author believes that these spherical masses were formed in the process of differentiation of the original magma, in the same way as basic complexes separate out from acid rock-magmas. To the same cause, rather than to the determining influence of specific gravity, he attributes the accumulation of ores in the contact-zone, that is, in the gabbro lying between the serpentine and the diabase. So far the decomposition of the gabbro having induced the concretion of the spherical masses, it is probably those spherical masses which have, where present, hastened the decomposition of the gabbro.

EFFECT OF ARSENIC ON STEEL.

By J. E. Stead.

At a recent meeting of the British Iron and Steel Institute an interesting paper on this subject was read, in which was given details of the very complete investigation of the subject by the author. He commenced by saying that the investigations of Messrs. Harbord and Tucker were conclusive in showing that a large amount of arsenic in steel is objectionable, but the results did not prove that small quantities are harmful. It appeared, however, to be the general impression that if a large quantity of arsenic is injurious, a small quantity must necessarily be proportionately so. In order to arrive at a conclusion on this point, he approached Mr. David Evans, of Middlesborough, suggesting to him that an investigation should be made on the subject. Mr. Evans co-operated, and the result was a series of tests and experiments, the details of which formed the basis of the paper.

The general conclusions the author arrived at were, that between 0·10% and 0·15% of arsenic has no material effect on the mechanical properties of steel for structural purposes. The tenacity is but slightly increased, the elongation is apparently not affected, and the reduction in area for the fracture test pieces is practically equal to that of the same steel without the addition of arsenic. With 0·20% of arsenic, the difference, though slight, was noticeable in the case of an acid open-hearth steel, but even then the only serious difference evidently caused by the arsenic is the inferiority of the bending properties of pieces cut from the plates across the direction of rolling after they have been tempered. With larger amounts of arsenic, however, the effect is decisive. With 1% the tenacity is increased, the elongation is slightly reduced, and the contraction materially reduced; the bending properties of the steel are, however, fairly good. When the arsenic amounts to about 1½% the tenacity is still further increased and the elongation and contraction of area are still further reduced, while the bending properties are poor. With 4% of arsenic the tenacity is increased, and the elongation and contraction become nil. It should be remarked, however, that the author considers that the trials with steel containing the higher percentages of arsenic cannot be looked upon as altogether satisfactory on account of the very small size of the ingots made, and the consequent small amount of work put upon them before the bars were tested; further trials are therefore required in regard to this matter.

The effect of quenching the steel after heating to a red heat in every case where arsenic was present in large quantities was to improve its bending property. Hot working is not affected in the slightest degree by even 4% of arsenic. When heated below the burning point, such material can be readily hammered and rolled. It may, therefore, be concluded that arsenic has not the slightest tendency to produce red-shortness. Arsenical steel does not appear to be more liable to corrosion; in fact, oxidition is retarded by the presence of small quantities of arsenic. Welding is made more difficult by even small quantities of arsenic, and electrical conductivity is materially reduced.

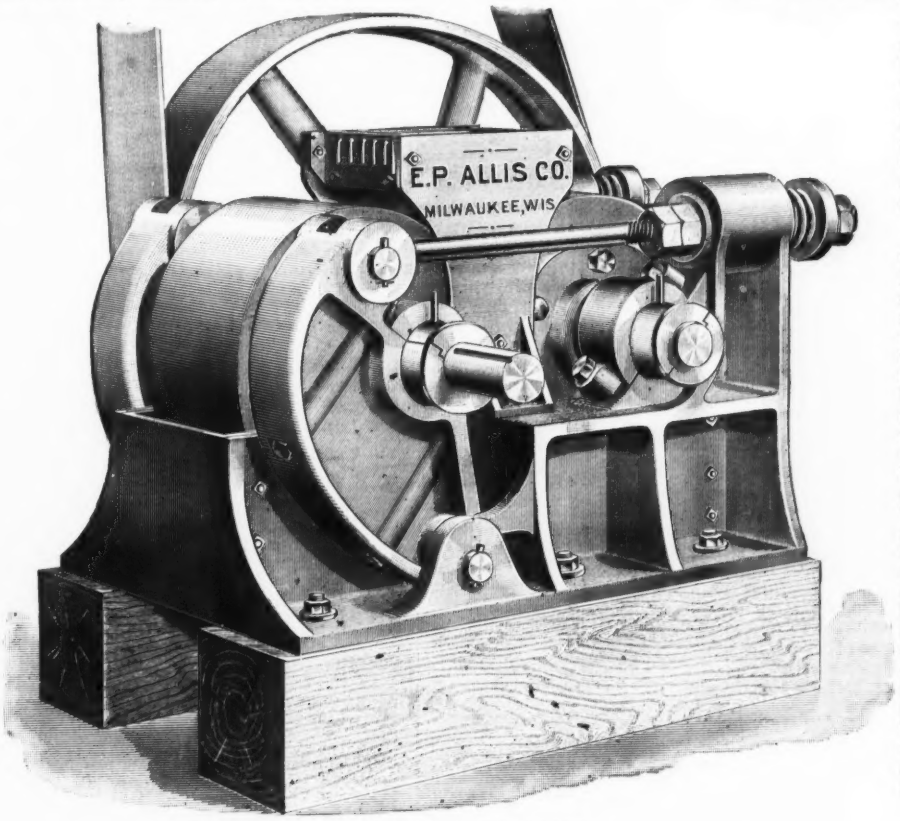
Electricity in Mining in Austria.—The Bleiberg Mining Union of Bleiberg proposes to establish a plant between Notsch and Kreuth for the utilization of available water power to the extent of about 350 H. P. The plant will be on the multiphase system, and the electrical energy will be transmitted to the Bleiberg mining district, a distance of about 5½ miles, there to be used for miscellaneous industrial purposes.

THE RELIANCE CRUSHING ROLLS

The reliance crushing rolls, built by the Edward P. Allis Company, of Milwaukee, Wis., are compactly built and have few parts liable to get out of order. The frame is constructed to secure the greatest possible strength with a minimum amount of iron. The journal boxes are made on the ball and socket principle to avoid any unequal strain on the bearings. The adjustable roll is mounted on a swinging pillow block, this being pivoted at the bottom and held in place at the top by tension rods, with springs and adjusting nuts as shown. This mode of construction is regarded as being highly advantageous over sliding boxes. The tension of the springs is adjustable, and by means of collar nuts the slapping together of the rolls is prevented.

The roll shafts carry a turned core upon which is slipped the chilled iron shell. This shell is bored tapering at both ends, and is held in place on the core by two split compression rings drawn together with bolts. The internal bore of the rings is straight to fit the core. The external face of the right is tapered to fit the taper in the shell. By this method a very slight taper is sufficient to hold the shell in place. When, by reason of long service, it becomes necessary to renew the shells, the old one can be removed and a new one put on in its place with little time or labor. In renewing shells the fit is not dependent upon absolute accuracy in the bore of the internal paper, as the compression rings, being split, will adjust themselves and make fit without drawing the shells endways out of position.

The makers claim that the ideal shell is one having a hard, durable, flawless and penetrating chilled surface outside, and a soft, tough texture inside. Such a shell will give the greatest amount of wear and still be free from any tendency to fracture.



RELIANCE CRUSHING ROLLS.

These rolls are made of different sizes up to 36-in. × 14-in. with belt drive on both sides. The rigid roll is the main drive, being driven by a heavy pulley of large diameter. The adjustable roll is driven by a pulley half the diameter and half the face, thus taking up little room and giving much better access to the rolls than where two large pulleys are used. When built for dry crushing a sheet steel housing is fitted around the rolls to make them dust proof. The feeding hopper is lined with renewable white iron plates.

For coarse crushing the larger sizes of rolls are recommended, and for this purpose are fitted with a heavy gear drive and run at slow speed. The 30 × 14 and the 36 × 14 rolls are fitted with a heavy pinion and gear drive. A train of four ordinary tooth gears is employed to drive the rolls, and is so arranged that no matter how much the movable roll moves, or how much the wear of the shells may be, the gears will always remain in mesh, consequently will wear evenly and not excessively. These gears are arranged to run the two rolls differentially one in fifty, which gives good results in the wearing of the gears as well as of the roller shells.

New Method of Determining High Temperatures.—In a communication to the Comptes Rendus, of the Paris Academie des Sciences, M. Daniel Berthelot suggests a method of determining the temperature of a furnace, which is based on the fact that the refractive index of a gas varies with its density. Thus two tubes are taken filled with the same gas, and a spectrum refracted through each, the two spectra being observed together. If then one is raised to a high temperature, and its contents allowed to expand, so as to maintain the pressure inside constant, it will be necessary to reduce the pressure in the second tube in order to re-establish coincidence between the two spectra. Preliminary experiments in the laboratory have shown the method to be capable of giving very accurate results.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

SUPREME COURT, THIRD DEPARTMENT.

Evidence as to the Condition of Premises.

Evidence of the condition of a place where an accident occurred, both before and after the occurrence, is admissable for the purpose of showing the condition at the time it happened.—Woolsey v. Trustees of Village of Ellenville, 32 N. Y. S. Reporter, 543.

SUPREME COURT, FOURTH DEPARTMENT.

Knowledge of Employer of His Employee's Incompetence.

Evidence of the general reputation of an employee as to his care and prudence is admissible to charge the employer with knowledge of his incompetency.—Park v. N. Y. Cent. & H. R. R. Co., 32 N. Y. S. Reporter, 482.

Experiments in Electric Heating.—In a paper read by Mr. R. E. Crompton before the Society of Arts in London a description was given of an electric heating plant which has been worked out by the author. The principal difficulty has been the discovery of a suitable material for the resistances, and of an efficient way of enameling them. As the result of a prolonged investigation, nickel steel has been adopted for the wires, while the enamel is put on in two or more layers, the hardest and most refractory being next the wires. In fact, this first coat of enamel consists of nearly pure silica, and will only fuse at a temperature approaching the welding point of wrought iron. The metal is roughened to give the enamel a bite. The wire is laid on as a waved or crimped ribbon embedded in the enamel. Trouble also arose from the fact that in bending or crimping the wire it was thinned at the bends, so that extra heat was developed there in the passage of the current. It was, therefore, necessary to design a machine to do the bending without altering the cross-section of the wire. Under favorable conditions, Mr. Crompton claims that electric heating is economical, in spite of the fact that often only about 6% of the energy of the fuel used in the steam engine is found in the current. It appears, however, that the efficiency of an ordinary cooking range is extraordinarily low, all but about 2% of heat generated being entirely wasted.

The Manufacture of Alumina from Clay.—The following process is stated by J. Hebbling, in "Comptes Rendus," to yield excellent results. The clay is thoroughly incorporated with a mixture in equal parts of ammonium and potassium sulphates in such proportion that three molecules of ammonium sulphate may be present to every molecule of alumina. The mixture is made into hollow bricks, which are then heated in an oven to 270° to 280° C. At this temperature gaseous ammonia is given off and acid ammonium sulphate produced, which immediately reacts with the potash salt present, acid potassium sulphate being formed. The latter, at the above temperature, combines with the alumina of the clay to form alum. The alum is finally extracted from the bricks by means of water and freed from iron by recrystallization. The insoluble silica remaining behind may be employed in cements. Granular alumina is prepared as follows: The powdered alum is spread out in a thin layer on shelves arranged in a vertical tower, which is traversed by the warm, moist ammoniacal fumes derived from the brick oven above mentioned. Under these conditions the alum is transformed in situ into alumina — retaining the form of the original powder—and potassium and ammonium sulphates. The latter may be subsequently removed by washing and used over again. The alumina thus obtained is absolutely free from silica and is readily convertible into sulphate, etc.

The British Patent Office.—The twelfth report of the Comptroller-General of Patents of Great Britain states that although the number of applications for patents in the year 1894 continued upon an ascending scale, being 270 above that of the previous year, this increase was considerably less than that of the normal average of the preceding seven years. The number of applications for patents has more or less annually increased from 17,176 in the year 1886 to 25,386 in 1894, being at the rate of 48%. It is interesting to notice a large increase in the number of applications for patents from Ireland in 1894, as well as in 1893, while among the colonies the largest proportionate advance is shown by Queensland. As respects similar applications from foreign States, Belgium, Germany and Sweden show the largest increase, the number of applications from France having remained curiously stationary during the past 10 years, being 788 in the year 1884 and only 799 in 1894. The applications from the United States, which reached the number of 2,597 in 1890, have fallen off since that date and amounted only to 2,017 in 1894.

Consumption of American Petroleum in Denmark.—R. J. Kirk, Consul at Copenhagen, has made a report to the State Department, comparing the use of American petroleum in Denmark with the Russian article. The report shows that during 1894, 653,543 hundredweight of the American petroleum was consumed, against 74,182 hundredweight of the Russian. The quotations to wholesale dealers at the end of the year were: American, 6·20 to 7·45 kroner (26⅛ cents) per hundredweight: Russian, 5·70 kroner per hundredweight. In 1890 the consumption of the American article was 403,000 hundredweight, against 123,000 hundredweight for the Russian. In 1894 American sales had increased to 737,000 hundredweight, and the Russian decreased to 74,000 hundredweight. As the prices of the American and the Russian article have been very nearly the same, this fact would seem, Mr. McLain says, to be practical proof of the superiority of the American oil and its greater popularity in the market.

Trial of Cornstalk Cellulose.—In some recent tests of the Marsden American cellulose and English cocoa cellulose, made at Indian Head proving grounds, the results were in favor of the former. The Marsden material is made of the pith of cornstalks. It was made into a cofferdam and shipped to the proving grounds. A cofferdam of the English product was also made and it was sent to the proving grounds. There the two were set up side by side, and a 6-in. and an 8-in. shell fired into each. The interior of the dams was then filled with water, and it was found that both practically held all the liquid. After a short time, however, a few drops of water were seen to trickle through the cocoa cellulose, but none penetrated the cornstalk product.

Alabama Coal, Iron, Land & Colonization Company, Limited.—The annual meeting of this company took place May 30, in London. The past year had not been very favorable for the company's operations. As this company gets its revenue by sales of land, not much business could be done as land is the first to feel trade depression and the last to benefit by trade revival. The property consists of 524,697 acres of freehold land, or considerably more than the territory with which the company started, although sales have been effected and the coupons have been paid almost every year of its existence. The certificate-holders have this year had no coupon paid, but the shareholders have, as usual, received their 6 per cent., the chairman, Mr. Abraham, said, "There is enough to pay interest for the next five years quite independent of any future sales." Improvement has set in with the present year, and there is every reason to expect that during its currency there will be considerable purchases of land from the company.

Spanish Imports and Exports.—For the four months ending April 30th, imports of coal into Spain were 592,455 metric tons, a decrease of 3,758 tons as compared with 1894. Coke imports were 48,821 tons, showing a decrease of no less than 34,594 tons. Imports of metals included 7,183 tons of cast iron, 2,633 tons of wrought iron, 5,658 tons of steel and 1,422 tons of tin plates. The imports all show a considerable decrease. Exports of metals for the four months included 6,804 tons of pig iron, a decrease of 4,376 tons; 9,352 tons of copper, a decrease of 316 tons, and 44,825 tons of pig lead, a decrease of 1,459 tons. The exports of ores have all been lighter this year than in the corresponding third of last year. The custom house statement being as follows for the four months: Iron ores, 1,476,494 metric tons, a decrease of 259,646 tons; copper ores, 159,867 tons, a decrease of 5,098 tons; zinc ores, 8,154 tons, a decrease of 4,309 tons; lead ores, 2,740 tons, a decrease of 1,903 tons. The total exports of salt for the four months were 63,334 tons, showing a decrease of 16,640 tons from last year.

Experiments on the Rusting of Metal Structures.—Mr. E. Guber, a member of the American Society of Civil Engineers, recently examined a large number of iron and steel bridges, with a view to ascertaining the best means of preserving such structures from rust. In all cases rust was found beneath the paint. In some instances the amount was very little, but in others the condition of affairs was much worse. In most cases the rust occurred in spots. The smoother the surface the less the rust, plates being generally much freer than angles, and eye-bars were also usually clean. Parts that had been heated in the process of manufacture also showed less rust than others. In cases in which the metal had been oiled in the shops there was much less rust under the paint than where this precaution had been omitted. As the rust spots under the paint were no worse in the old bridges than in the new ones, it was concluded that the corrosion was not proceeding actively. Iron oxide paint seemed to get tougher and more adherent with age, save where the coating was very thick, as in cases in which the repainting had been done at short intervals. It was then comparatively soft, and could be easily removed. In the case of the bridges which had been painted with red lead, the paint was universally brittle and very easily removed; and in the case of one painted with white lead as a finishing coat, the paint was cracking wherever exposed to the sun.

Reduction of Alumina by Carbon.—Alumina has hitherto been regarded as unreducible, but H. Moissan shows that when crystals of corundum are heated in a carbon tube in the electric furnace, metallic aluminum is obtained. At the high temperature of the electric furnace, produced by a current of 1,200 amperes at a pressure of 80 volts, the vapor of carbon is able to reduce the vapor of alumina. In another experiment 100 grms. of alumina were placed in a carbon tube (400 mm. long by 40 mm. internal diameter) closed at one end, and so arranged in the furnace that the closed end was raised to the highest temperature. On passing a current of 300 amperes at 65 volts for 15 minutes, vapors were given off at the open end of the tube, which condensed on cold bodies and proved, on examination, to be minute spheres of fused alumina. After cooling, the carbon tube was found to contain a white deposit of alumina together with an ingot of alumina, while that portion of the tube which had been raised to the highest temperature contained a skin of graphite formed by the condensation of the vapor of carbon. On the walls of the tube were found small white or yellowish globules, consisting of a mixtue of aluminum and its carbide. Starch, which supplies the carbon necessary for the reduction, may with advantage be mixed with the alumina before heating. Alumina may be melted in a carbon crucible without any reduction taking place, and it is only when the temperature is raised sufficiently high to vaporize both the alumina and the carbon that reduction is possible.

Absorbent Blocks.—The following article, by Peter T. Austen and W. Homer Broadhurst, was read before the New York section of the American Chemical Society: For drying moist precipitates unglazed plates are generally used in the laboratory, but they have the disadvantages of being rather expensive, as well as fragile, while their absorptive capacity is not great. We have found that a mixture of equal parts of infusorial earth and plaster of paris when moistened will set, forming a block that after drying has a very strong absorbent power for liquids. The plaster and infusorial earth are thoroughly mixed, then moistened with sufficient water to work easily and placed in the molds. After setting, the blocks are placed in an air-chamber and heated for a day or two at 100 to 120° to free them from hygroscopic moisture. The molds are easily made in the following way: A sheet of glass, the larger the better, is laid on a table and rubbed with waste oiled with a few drops of light lubricating oil. Long glass strips, 1 in. wide and ¼-in. or more thick, are laid on edge on the plate at a distance apart of 6 in., if the block is intended to be of that size, and cross-pieces of the same kind of glass strips, but cut in suitable lengths, are placed between the long parallel strips, thus making squares. The strips should also be oiled a little. The wet mixture is poured in and the top smoothed with a straight edge of wood. After setting, the strips of glass are easily removed and the blocks come off the plate easily and are ready to be placed in the drying oven. The surface next to the glass plate is very smooth. These blocks are very convenient in qualitative analysis and in the preparation of substances. The filter-paper containing the set precipitate, or substance to be dried, is placed on the smooth side of the block, and after a short time much of its moisture is absorbed. One or more filter-papers may be placed between the substance and the block if too intimate contact of the substance and the block be not desired.

The Miners' Eight-Hour Day.—A correspondent of the London "Colliery Guardian" says: The eight hours day for hewers—a maximum of nine hours from bank to bank—has been in operation at the Royal Mines, Saarbruck, since the middle of 1889. Herr Weisen, of the Royal Mine Direction, has forwarded a copy of the regulations on the subject that have been in force since January 1st, 1893, and of which the following is the substance: Underground hands must report themselves on going down and coming up, by answering to their names when called over, in the chief miner's office at the pit bank, the early shift beginning at 6 a. m., the afternoon at 3 p. m., and the night shift at 9 p. m., only those who, like firemen, are engaged in occupations outside the shift, being exempted from this verification. The regular daily period of work for miners proper is fixed at eight hours, the time from the beginning of the descent to the end of the ascent of each gang not to exceed nine hours. Those engaged in winding men or coal, and loading and unloading underground or on the surface, must when required start work an hour before the beginning of a shift and continue working up to an hour after its close. The period of work, when not shortened by special circumstances, for enginemen, stokers and signalmen is fixed at twelve hours on working days, and eight hours on Sundays and holidays; and that for hands engaged in surface work, including stoppages, is also twelve hours, beginning as a rule, at 6 a. m. On the days before and after Sundays or holidays, the shift may be reduced by three hours by the Royal Mine Direction, on the report of the Workmen's Committee, in the case of those who can only go home on such days; but this provision entails no prolongation of the working hours. Stoppages for rest are regulated by the actual mining work, and that immediately depending upon it, such as winding and loading, provided that such stoppages shall not together exceed half-an-hour for the day of eight hours. In other cases, with the twelve-hour shift, the stoppages may amount to two hours together; and, in case the majority give up the afternoon's half-hour stoppage, the shift may be shortened to that extent. In the event of present danger to the safety of the mine, or the life and health of the men, they must continue working beyond the regulation period; and if, in consequence of mischance, a shift be omitted or shortened, they must continue working beyond the regular period, or put in a supplementary shift. Only two overshifts at the outside can be required in one week; and the regular working period must not be increased by more than two hours.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, JUNE 4TH, 1895.

540,267. Method of and Apparatus for Treating Metals. Peter McIlvried and George Nash, Braddock, Pa. The process consists in carrying the metal through a bath by a succession of progressive steps in a single horizontal direction from one end of the bath to the other, with intervals of rest, and imparting to it at each step a vertical agitatory motion and a progressive forward motion.

540,277. Gas Producer. Luke P. Shinner, Cleveland, O., assignor to the American Smokeless Furnace Company, same place. Consists of a suitable grate and ash-pit and a discharge for the products of combustion at the rear thereof, starting at a point near the grate bars, the walls of the producer extending above the discharge, all round, and having a dome-shaped top.

540,306. Tunneling Machine. Thomas W. Fry, Chicago, Ill., assignor by mesne assignments to the Sullivan Machinery Co. Same place and Claremont, N.H. Consists of a main frame, a cutter frame mounted therein, a power shaft, three pinions on power shaft having clutch faces and connections therefrom to the cutting mechanism, and an auxiliary shaft at the side of and moveable toward and from the power shaft and carrying pinions adapted to mesh with the pinions on the power shaft to change the speed of the cutting mechanism.

540,359. Process of and Apparatus for Treating Ores. George Kennan, Boulder, Colo. The process consists in subjecting the ores of gold and silver to the action of cyanide of potassium, agitating the same for a short period of time, discontinuing the agitation, and bringing air in contact therewith, the oxygen thereof increasing the action of the cyanide, continuing the agitation for a few minutes, until every particle of ore has been brought into contact with the cyanide solution from the remaining pulp or ore.

540,415. Apparatus for Producing Illuminating Gas. William Young and Alexander Bell, Peebles, Scotland. Consists of an inclined heating surface, external heating means, an oil supply for the retort, a discharge for the gaseous products, a scrubber with an oil inlet at one end and a gas inlet at the other, and a discharge pipe from the scrubber for the fresh oil and imperfectly decomposed products washed from the gas by the fresh oil leading to the retort.

540,441. Dry Separator. Elisha A. Hewitt, Denver, Colo. Consists of a wheel adjacent to the outlet of the hopper, carrying breaking pins and fan blades, and a stationary grate adjacent to the wheel, the combination operating to reduce the debris or dirt while in suspension.

540,465. Lining Metallurgical Furnaces. Benjamin Talbot, Pencoyd, Pa. The mode consists in introducing into the furnace, while the same is highly heated, basic material mixed with the solid fusible hydrocarbon, the mixture being in a powdered or granular state.

540,505. Fuel-Gas Retort. John Martin, Berkeley, Cal. Consists of a shell or casing supported upon closed inside foundations and comprising a foraminous bottom, vertical end walls and an arched roof projecting at its rear end beyond the plane of the rear wall of the shell or casing so as to leave a clear roof space, the upper portion of the front wall corresponding with the space inclosed by the roof being provided with openings and a vertical sliding regulating plate.

540,528. Centrifugal Separator. Nathan G. Williams, Bellows Falls, Vt. Comprises a circular series of inclined space rods projecting inwardly, a centrifugal bowl provided with a supply tube and two circular series of rods.

540,559. Apparatus for Manufacture of Gas. Charles W. Pinkney, Smethwick, Assignor of one-half to Tangyes, Limited, Soho, England. The combination consists of a reservoir for the gas and a retort, of a passage connecting same, a cut-off valve, an overflow pipe and a movable receptacle.

PERSONAL.

Mr. Alexander S. Shepard, general manager of the Batopilas Mining Company, of Chihuahua, Mexico, will return to Washington, D. C., for a year's rest. Mr. L. H. Stevens, the company's secretary, will manage the mine in Mr. Shepard's absence.

Mr. Frank Everett will succeed F. G. Wilson as resident manager for the Hector Mining Company, of Telluride, Colo. Mr. Everett has had much experience in mining in Leadville, Aspen, Creede and other Colorado camps, as well as in California and other States.

Mr. D. B. Huntley, formerly manager of the Morning mine at Mullan, Idaho, has been appointed manager of the Ute and Ulay mines at Lake City, Colo., and will at once take charge and open the mines, which have been closed for some time. Mr. Huntley made a most excellent record at the Morning mine and will, we hope, be successful in his new charge.

Mr. Thomas Haight Leggett, the well-known mining engineer, president and general manager of the Standard Consolidated Mining Company, of Bodie, Cal., has accepted an offer from an English company and will go to the Witwatersrand. He is another addition to the number of well-known American engineers who are acting as mining superintendents in South Africa.

The County Commissioners of Ouray County, Colo., have appointed delegates as follows to the mining congress to be held at Telluride on June 19th: E. C. Bacon, F. J. Hulaniski, P. K. Humphrey, A. F. Dunbar, T. R. Heibler, J. O'Neil, E. A. Krisher, E. S. Rice, L. I. Henry, A. E. Dewey, J. C. McDowall, Curb Von Hagen, R. H. Wilson, Senator Carney, H. W. Reed, S. J. Couchman, Richard Collins, J. F. Sanders, W. W. Rowan, T. W. Knowles, O. P. Lyon, together with the board itself.

OBITUARY.

Charles Walton Ogden, a member of the firm of Ogden & Wallace, well-known iron and steel merchants of this city, was found dead on June 11th. It is supposed that he committed suicide while suffering from temporary mental aberration. Mr. Ogden had practically retired from business some time ago.

John D. Fay, formerly a prominent engineer and surveyor, died in Rochester, N. Y., on June 6th, aged 80 years. He was employed on many of the largest bridges built during the last half century, notably the historic long bridge across the Potomac at Washington. He was sent to Nicaragua by Commodore Vanderbilt in 1849 to survey a route for a ship canal across the continent, and the line he recommended was the same as that of the present Nicaragua canal. He was actively engaged in the construction of the Erie canal.

Daniel Kirkwood, late Professor of Mathematics in Indiana State University, and one of the best known astronomers in America, died in Riverside, Cal., on June 11th. Professor Kirkwood was born in Bladensburg, Md., in 1814. At the age of 20 he entered the Academy at York, Pa., and after a four years' course was elected first assistant and mathematical instructor. In 1843 he became principal of the Lancaster (Pa.) High School. In 1851 he was chosen Professor of Mathematics by Delaware College, and three years later became president. He was called to the chair of mathematics in Indiana University in 1856, which position he occupied until his retirement as emeritus professor in 1886. The degree of A. M. was conferred on him by Washington College, Pa., in 1850, and that of LL.D. by the University of Pennsylvania in 1852. He was a member of various scientific societies and contributed largely to scientific journals. He was the author of a book entitled "The Asteroids or Minor Planets between Mars and Jupiter."

SOCIETIES AND TECHNICAL SCHOOLS.

Engineers' Club of Philadelphia.—A regular meeting of the club will be held June 15th. A paper on "The Philadelphia & Reading Coal Storage Plants" will be read by Wm. A. Beatty.

Engineers' Club of St. Louis.—The club met June 5th; 18 members and five visitors present. The minutes of the 418th meeting were read and approved. The Executive Committee reported the doings of its 191st meeting, announcing that arrangements had been made for a meeting of the club on June 19th, on which date Mr. H. A. Wheeler will present a paper on "Vitrified Brick for Street Paving." Applications for membership were announced as follows: Clinton Kimball, assistant engineer Bell Telephone Company, of Missouri; John J. Lichter, Jr., engineer Union Depot Railway Company; H. H. Sykes, chief engineer Bell Telephone Company, of Missouri. Mr. Edward Flad adressed the club on the subject of stand pipes, making special reference to a tower designed by him and just completed at St. Charles, Mo. Its dimensions were 25 ft. in diameter by 70 ft. high; capacity 250,000 galls. It was encased in brick work tied to the tower itself. The stand-pipe was stiffened by six circular girders, the object of which was to maintain the circular shape of the tower, so as to afford maximum strength to resist wind pressure. These girders were on the outside of the tank, occupying the space of 2 ft. between the tower itself and the casing. A stairway was also placed in this space. The stand-pipe was covered by a roof of iron and slate. Due attention had been given to architectural features. The cost of the stand-pipe was: For iron work, $4,450; brick work, $2,807; foundation, $677; total, $7,934. Mr. Flad also showed a tower designed by him for Laredo, Tex. He showed stereoptican views of the St. Charles, Laredo and other towers of recent design, as well as of a number of towers which had failed.

American Society of Mechanical Engineers.—A meeting of the society will be held June 25th to 28th in Detroit. Among the papers to be read are the following: "The Old and the New," Robert Allison; "A New Form of Sterilizer," A. M. Goodale; "A Portable Disinfecting Plant," W. H. Francis; "Analysis of the Tremont Turbine," DeVolson Wood; "Rustless Coatings for Iron and Steel" (third paper), Matthew P. Wood; "A Piece-Rate System," F. W. Taylor; "The Down Draught Furnace for Steam Boilers," Wm. H. Bryan; "A New Shaft Governor," E. T. Armstrong; "A Method of Proportioning the Cylinders of Compound Engines," E. C. Knapp; "Expansion Bearings for Bridge Superstructures," Geo. S. Morison; "Tests of the Experimental Engine of Sibley College, Cornell University," R. C. Carpenter; "Tests of a Combined Electric Light and Electric Railway Station," D. C. Jackson; "Pipe Covering Tests," Geo. M. Brill; "The Strength of Iron as Affected by Tensile Stress While Hot," DeVolson Wood; "The Effect of Length of Specimen on the Percentage of Ductility," R. C. Carpenter; "A T-Square and its Mountings," W. A. Gabriel; "Efficiency of Boilers," F. W. Dean; "Force Required and Work Performed in Driving and Pulling Out Wire Nails," R. C. Carpenter; "New Forms of Friction Brakes," W. F. M. Goss; "A Horse-Power Planimeter," E. T. Willis; "A Coal Calorimeter," R. C. Carpenter; "Tests to Show the Distribution of Moisture in Steam when Flowing in a Horizontal Pipe," D. S. Jacobus. With the reports of professional committees at the Wednesday morning session will be presented and discussed two papers by Mr. W. J. Keep, of Detroit, Mich., member of the society, contributed as monographs upon subjects forming part of the work of the Committee of the Society upon Standard Methods of Tests and Testing Materials. One is entitled "Transverse Strength of Cast-Iron" and the other is entitled "Keep's Cooling Curves and the Molecular Changes in Metals Due to Varying Temperatures."

Alabama Industrial and Scientific Society.—At the meeting held June 8th, the president, Dr. Wm. B. Phillips, read his annual address, which treated largely of magnetizing of ore and the removal of silicon. He had some specimens of magnetized ore, for illustration. Col. J. A. Montgomery read a paper on "Utilization of By-products From Coke Ovens." He displayed plans of a new style of coke ovens, which, though costly, were able to pay for themselves in a short time. The result of the election was as follows: President, Thomas Seddon, Birmingham; vice-presidents, E. A. Uhling and C. E. Bowron, Birmingham; secretary, Eugene A. Smith, Tuskaloosa; treasurer, Henry McCalley, Tuskaloosa.

INDUSTRIAL NOTES.

The Juniata furnaces, at Newport, Pa., with an annual capacity of 18,000 tons, have been put in blast again.

The Bessemer (Ala.) Land and Improvement Company has voted $300,000 to build the proposed steel plant at that place.

T. W. Robinson, general superintendent of the Colorado Fuel & Iron Company, at Pueblo, Colo., has announced an advance of 10% in wages.

The Cambria Iron Company, Johnstown, Pa., has made an issue of $2,000,000 new stock, the proceeds to be used in improving and adding to the already large plant.

The Bird Coleman furnaces at Cornwall, near Lebanon, Pa., which have been idle the last two years, were blown in June 11th, giving employment to about 120 men.

The Harrisburg Foundry and Machine Works, Harrisburg, Pa., has issued a neat and remarkably well illustrated pamphlet showing the "Ideal" engine manufactured by it.

The Allegheny mills of the Oliver Company, which have been idle for two years, have partially resumed, so that with a couple of exceptions all the Pittsburg plants are in full or partial operation.

An explosion of fire-damp occurred in a mining pit near Antonienhutte, Prussian Silesia, June 10th., while 500 men were at work in the mine. All but 26 were rescued.

The wages of 500 ore miners in the employ of the Pioneer Mining and Manufacturing Company, at Goethite, Ala., were voluntarily raised 10% June 7. This is the first advance made in the Alabama mineral region.

In the Mahoning Valley the second 10% increase of wages this season is to go into effect at the end of this week. This, the dispatches say, will put the wages back where they were when the depression fell upon the country.

The contract for the electric launches for the lakes at the Cotton States and International Exposition at Atlanta, Ga., has been let to Gen. C. H. Barney, of New York. The launches will be made of cedar, with oak frames and mahogany decks.

The Bethlehem Iron Company on June 11th announced an increase in wages of from 5% to 10% in all departments affected by the reduction made in January, 1894. The increase takes effect on June 15. Two thousand men are benefited by the increase.

The Top Mill Blast Furnace of the Wheeling Steel and Iron Company, Wheeling, W. Va., has resumed operations after a long idleness. The furnace has been practically rebuilt since last in blast, and is now one of the largest and most complete in the Ohio Valley.

Chas. D. Mosher, New York, has issued an interesting pamphlet on the steam separator, describing its object, action and application. The pamphlet contains much information of value to steam users, and embraces also a description and illustrations of the Mosher steam separator and grease extractors.

There was filed with the Secretary of State at Albany, N. Y., June 11th, a certificate of an increase of the capital stock of the Solvay Process Company, of Geddes, Onondaga County, from $3,000,000 to $4,000,000. The certificate states that the whole amount of the debts and liabilities of the corporation is $1,187,945.

The Sheridan furnaces, at Lebanon, Pa., which were operated under a charter and leased by Gen. E. B. Grubb, of Burlington, N. J., and others, were banked a few days ago. J. G. Adams, attorney for the laborers at the furnaces, has filed claims to the amount of $7,500. The amount of wages remaining unpaid aggregates nearly $9,000.

The New Castle (Pa.) Seamless Steel Tubing Company has been organized to manufacture seamless tubing for all purposes, such as bicycles, trolley poles, boiler tubes, etc. The location for a plant has not yet been settled. The main building will be 600 feet long, and will be built of iron and brick. Several other buildings will also be required.

The Norwalk Tramway Company, of Norwalk, Conn., has placed an order with the Berlin Iron Bridge Company, East Berlin, Conn., for a car barn 45 ft. in width and 160 ft. in length, constructed entirely of iron. It has also secured the contract for the steel bridges for the Central Railway & Electric Company, of New Britain, Conn., for various extensions.

The stack of the new Spearman Furnace, at Sharpsville, Pa., will be 76 ft. high and the hoisting tower and house will be 100 ft. high. The casting house will be 28 ft. high, 140 ft. long and 60 ft. wide. The old casting house at the Spearman Furnace is being torn down and a new one will be built in its place. Work on the other improvements about the furnace is going on rapidly, but the furnace will hardly be ready for operation before September 1st.

The Pennsylvania Steel Company, of Steelton, has received from the Baltimore & Ohio Railroad Company a contract for a steel coal trestle, 500 ft. long, requiring 200 tons of steel, to be erected at Cumberland, Md. No. 2 open-hearth furnace having a capacity of 15 tons, has resumed after an idleness which began in October. No. 1 furnace has also resumed. The company has 11 open-hearth furnaces, five of them of 50 tons capacity per heat in operation at present.

It is reported that the Jellico and Birdeye Coal Company, of Kentucky, is to be reorganized, and pending reorganization a deed of trust was filed June 5 in the county clerk's office at Louisville. Mr. E. T. Halsey was named trustee. A committee, consisting of Logan C. Murray, Rod Perry and J. A. Shuttleworth, has been appointed to act in conjunction with Mr. Halsey in effecting the reorganization. The company owns mining property in Whitley County and in the coal belt in Southeastern Kentucky.

The Carnegie Steel Company, Limited, has broken ground at Duquesne, Pa., for the erection of two blast furnaces, which will be 100 ft. high by 22 ft. bosh. They will have a capacity of from 450 to 500 tons per day, and when completed it is expected that two more will be built. Contracts for the equipment of the furnaces have not yet been given out, but will be within a few days. The Edward P. Allis Company, of Milwaukee, Wis., has secured a contract for seven duplex cross compound condensing blowing engines, with 76 in. blowing cylinders and 60 in. stroke, and one 40 in. high and one 78 in. low-pressure steam cylinder.

Messrs. Riter & Conley, Pittsburg, have decided to remove their works to lower Allegheny, to be operated in conjunction with the large works at that place. The firm is hampered for space in Pittsburg, while in Allegheny they have large ground. It is the intention of the firm to erect a boiler shop 150 × 350 feet in size, together with a hydraulic shop and a shop for light sheet-iron work of equal size. There will also be a large boat yard, which will enable the firm to carry on the work of building heavy steel boats on a more extensive scale. The work of removing the buildings is expected to be commenced some time during the present year.

The Sheffield (Ala.) Coal, Iron and Steel Company has been organized with a capital stock of $1,500,000 with the following officers: John Fritz, president; W. H. Berlin, vice-president and chairman of the finance committee; Samuel Adams, general superintendent; Geo. H. Berlin, secretary; J. A. McKee, treasurer; Henry Adams, superintendent of the Jasper division; Joseph Adams, assistant to general superintendent; Howard Lamar, counsel. The directors are as follows: John Fritz, E. W. Cole, J. C. Neely, Napoleon Hill and W. H. Berlin. The company is bonded for $750,000. The bonds will, to a large extent, be held by their present owners. Active steps have been taken to put the furnaces in blast as soon as possible.

The Goulds Manufacturing Company, Seneca Falls, N. Y., reports recent sales of triplex power pumps to the following: Freydenburg Falls Paper Company, Plattsburgh, N. Y., one 12×12 in. pressure pump to be used with grinders; Jay Paper Company, Jay, Me., one 7×8 in. stuff pump to be used for pumping stuff; Lewiston Foundry and Machine Company, Lewiston, Pa., two 1¼×2 in. triplex power pumps for boiler feeding; Tide Water Oil Company, Bayonne, N. J; three 4×6 in. triplex power pumps, two of these to be used for pumping oil and one for pumping water; one 1¾×6 in., and one 2½×6 in., which are to be used for pumping ammonia; Standard Oil Company, of New York, Olean, N. Y. Refinery, two 8×12 in. triplex power pumps for water supply; P. H. Potter, Springfield, Mass., one 4×6 in. triplex power pump for boiler feeding; Worcester Engineering Company, Worcester, Mass., one 12×12 in. triplex power pump for water-works system at Millbury, Mass.

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GENERAL MINING NEWS.

ALABAMA.

Marshall County.

Santa Creek Gold Mining Company.—This company was organized June 5th, at Scottsboro, and has been incorporated with the following members: D. J. Jones, C. E. Jones, Geo. C. Hunt, Virgil Bouldin, F. V. Bodfish, J. B. Harris and W. L. Martin. The capital stock is $100,000. The object is to mine gold, to buy and sell mining and other lands, and do a general mining business. They have commenced to sink a deep shaft near the Santa Creek ferry.

ALASKA.

Alaska Mexican Gold Mining Company.—This company reports the clean-up for the month of April as follows: Period since last return, 39 days; bullion shipped, $14,946; ore milled, 6,073 tons; sulphurets treated, 121 tons. Of bullion there came from sulphurets $4,570. The working expenses for the month were $13,277, leaving a balance of $1,669. The average total output was $2.46 per ton milled, and the expenses were $2.18 per ton. The return from the sulphurets gave an average of $37.77 per ton treated.

ARIZONA.

Graham County.

Detroit Copper Company.—This company, at Morenci, has put engineers at work surveying a new railroad from that point to Solomonville, where it will make connection with the Gila Valley, Globe & Northern Railway.

CALIFORNIA.

Morris County.

Bodie Consolidated Mining Company.—The superintendent's latest weekly official letter says: We finished crushing on May 29th and finished cleaning upon June 1st. Crushed during the week ending June 2d 45 tons of ore, the average battery sample of which was $28.41; tailings, $7.78 per ton. Total amount of ore crushed on this run, 525 tons. Shipped to the San Francisco office June 3d, bullion valued at $13,587. Total amount of bullion shipped for the run, $23,351. The usual prospecting work is being done in the mine.

Butte County.

(From Our Special Correspondent.)

Princess Mining Company.—This company, of Oroville, has filed articles of incorporation. Officers and directors are: H. J. Milburn, G. H. Thomas and Ed. Harknass.

Calaveras County.

Gottschalk Mining & Milling Company.—Articles incorporating this company have been filed at Salt Lake. The incorporators are: Edgar S. De Golyer, president; Edwin H. Hackett, vice-president; Adolph T. Vollmer, treasurer; John Henry Woodman; and James M. Denny, secretary. The capital stock is $2,500,000, divided into 500,000 shares of the par value of $5 each. The property of the company comprises the Gottschalk quartz mine and a large mill site adjoining. The company will at once develop the property, among the first acts contemplated being the erection of a mill.

Eldorado County.

Gold Ring.—The mill at this mine in Green Valley was recently destroyed, but the owners are preparing to rebuild at once.

Lake County.

(From our Special Correspondent.)

Utopia Mining Company.—This company, of Lakeport, has filed articles of incorporation. Directors: M. S. Sayre, A. H. Spurr and J. J. Sheridan.

Madera County.

(From Our Special Correspondent.)

Hanover.—This mine has been leased to T. B. Harrington, of Madera. A 5-stamp mill is in operation.

Mono County.

Bulwer Consolidated Mining Company.—The superintendent of this company writes as follows under date of June 6th: The south drift from west crosscut from stope above the 150-ft. level was extended 6 ft., with about 12 in. of low-grade ore in face. North drift from crosscut east from Washington vein was extended 9 ft.; rock in face is very hard and ore seam small. Stope from No. 1 upraise, above main drift 200-ft. level, is yielding some gold ore; the ore is extending further south than heretofore. About 30 tons of ore were extracted, estimated at about $30 per ton.

Nevada County.

(From Our Special Correspondent.)

Federal Loan.—A 5-ft. vein of rich ore has been struck in this mine at the 800-ft. level.

Gold Ridge Consolidated Mining and Milling Company.—At a meeting held at San Francisco, the following directors were elected: W. H. Lillie, C. M. Jennings, R. Phelan, B. F. Ricker and R. H. Daley. The property of this company is located in the northern part of the county. A tunnel is being run and the prospects are good.

Orleans.—A new chute of ore has been discovered on the 300 level of this mine at Grass Valley, which averages 2 ft. in thickness. Superintendent Brockington is figuring on adding 10 stamps to the mill.

Placer County.

Rising Sun.—This quartz mine, near Colfax, of which J. H. Neff is superintendent, has been leased to Judge N. F. Clearly, of New York, for a term of years, with the privilege of purchasing. Improvements of $20,000 will be made in the mine, one of which will be to run a tunnel of 1,800 ft. to tap the mine at the 500-ft. level.

Plumas County.

(From Our Special Correspondent.)

Butterfly.—This mine, five miles northwest from Quincy, has ore enough in sight to keep the 10-stamp mill busy for some time. An engine and boiler have been put in and four Frue concentrators ordered.

Siskiyou County.

(From Our Special Correspondent.)

Black Jack.—This quartz mill, which burned down some days ago on Klamath River, near Hornbrook, is to be replaced by a larger mill of 10-stamp capacity.

McConnell & Quinn.—At this claim, on an island below the mouth of the Humbug Creek, on the Klamath River, a large force of men is working steadily. An electric light plant will be installed shortly.

Tuolumne County.

(From our Special Correspondent.)

Alameda.—This mine, one mile northwest of Jamestown on the "mother lode," has been bonded by a New York syndicate. The several shafts and tunnels show good bodies of ore.

Laura & North Star.—At these mines, on the "east lode," between Cherokee and Summerville, a strike was made in the south drift on the 200-ft. level. The vein shows free gold and rich sulphurets. The vein to the north at the North Star is about 8 ft. wide and prospects well.

Rawhide.—A suit growing out of negotiations for the sale of the Rawhide mine, with other Tuolumne County mining property, and involving $1,305,000, has been begun in the Superior Court at San Francisco by N. F. Cleary, an attorney and mining man, who represents Saunders, Fielding & Bond, of London, New York and Chicago. The suit is against W. A. Nevil, W. H. Martin and John Ballard, who have been restrained by Judge Seawell from selling the Guild gold mining property, on which the plaintiff claims to have received an option with an extension of time. Cleary states that the defendants owned the Guild Mining Company shares, aggregating in value $1,000,000, and on the agreement to transfer them to Cleary, placed 95,000 shares with the Wells-Fargo bank to await payment of the purchase money. An expert examination of the mining property was made, and as a result Cleary received the option on some additional property, with the purchase price fixed at $1,305,000. An extension of time on the payments is claimed by Cleary, who says he was to pay $50,000 on July 1st of this year and $1,150,000 on August 1st. Now Cleary alleges that the defendants are trying to get out of the agreement, and he has obtained from Seawell an order restraining them from making any other deal with the property.

Star Group.—These mines, 20 miles northeast from Sonora, are being pumped out. Most of the ore in these mines is high grade.

COLORADO.

Clear Creek County.

Dunderburg Mining Company.—The suit of Olds vs. the Dunderburg Mining Company, the Frostburg lode and the Dunderburg lode, being involved, was commenced at Denver, on May 30th. The property in dispute is near Silver Plume. The plaintiffs claim that the Dunderburg Mining company ran underground levels from their property into the Frostburg and have been taking out ore surreptitiously for years. Nearly $200,000 worth of ore, it is claimed, has been taken out in this way. The property is valued at about $500,000 and if the appellants win they will probably bring suit to recover for the ore which they claim has already been taken out.

El Paso County—Cripple Creek.

(From Our Special Correspondent.)

Baby McKee.—This property, on the north slope of Gold Hill, is being worked on lease. The lessees have this week erected a steam hoist. Within 150 ft. on this part of Gold Hill are 3 steam hoists at work, each one erected by lessees without bonds, and, unfortunately, short leases, and all on different mining claims, yet on the same vein. From each block of ground shipments are regularly made. In a statistical article by Edward Skewes, which appeared in the "Engineering and Mining Journal" on February 2d last, Gold Hill was not credited with a single steam hoist, or even horse whim. Today there are 7 steam hoists kept busy all the time, and horse whims and windlasses by the dozen, all of which were erected by lessees without bonds, save one. No part of the camp can show such a record for the current year.

Blue Bird.—This mine commenced work this week with a new set of lessees.

Blue Jay and Whippoorwill.—These claims, on Bull Hill, after two years of litigation, have compromised the supposed differences, and are being worked under lease by Mr. Hill, of the Windsor Hotel, Denver. The intention of the lessee is to work the same through Blue Bird ground at the 300 ft. level, the Blue Bird having driven a crosscut to its side line, which is parallel to the side lines of the Blue Jay.

Catherine.—This mine, on Raven Hill, has commenced work in good shape. The engine has ample power to sink the shaft an additional 400 ft. Regular daily shipments will soon be made. A new vein was recently discovered a few feet west of the original vein, about 3 ft. wide, from which some rich ore has been taken.

Cresson Consolidated Mining Company.—The Cresson, situated on the Arequa slope of Bull Hill, and owned by this company, this week made a strike in a shaft 43 ft. deep of 2 ft. of ore, which averages $40 per ton. This company has been constantly at work with a small force for nearly six months.

Keystone.—This mine, on Gold Hill, is the latest shipper. The vein in the shaft, 7 ft. deep, is 4 ft. wide, from which 14 tons were shipped, which is expected to yield over 2 oz. of gold to the ton. This property is also worked under lease and bond for 12 months; bond price, $20,000. The lessees, all working miners, think they can pay the bond in less than 6 months from the profits of the property.

Little Emma.—This mine, on Mineral Hill, is being worked on lease, and considerable milling ore is being saved for treatment in the local mills. The lessees appear to be working in a large "blow-out" or chimney, all of which assays for 30 ft. wide, the highest assay being $20, and some assays as low as $1.50.

Longfellow No. 2.—This mine at a depth of 7 ft. has uncovered a decomposed porphyry dyke which mills for 10 ft. wide $8 on the plates.

Lucky Guss.—This is one of the busy leases of the camp. About 50 men are employed in a small block of ground, and the ore is being sent to the smelters at the rate of three cars a week. This property is on Bull Hill, and is owned by the Wilson Creek Consolidated Mining Company.

Pharmacist Mining Company.—The Pharmacist steadily improves, and the grade of shipping ore increases; the last car netted over $90 per ton, and the car now at the smelters is expected to yield over 6 oz. per ton. Sinking is being carried on below the 500-ft. level. An assay for 4 in. wide taken north of the shaft yielded 77 oz. to the ton recently.

Rotten Hole.—This property, on Mineral Hill, has a shaft sunk 104 ft. and is being worked under lease and bond. The shaft was sunk to a depth of 80 ft. on a seam less than 2 in. wide, and without any value. At that point the vein commenced to widen until at the present depth it has a width of over 4 ft. and the grade of ore has so much improved that a carload is awaiting shipment. It is not presumed to be high grade, as it was broken without any attempt at sorting.

The Home Run.—This mine, on the south slope of Squaw Mountain, has exceeded anticipations. The shaft is now down 40 ft.; the vein is fully 4 ft. between granite walls. A carload is ready for shipment of an average value of over 10 oz. per ton. A shaft house has been erected.

The Wilson.—This is one of the Free Coinage group of claims, and has shown much improvement during the past week. A drift extended north at

the 4-ft. level exposed a rich deposit of telluride ore in the phonolite fully 3 ft. wide.

Union Mining Company.—This company declared all its leases canceled on the Orpha Mays No. 1 and 2, and on the Pike's Peak Nos. 1 and 2, and all have peaceably surrendered save a Mr. Wullf, who was promised 6 months additional by the majority of the directors provided certain work was done, which he maintains, was complied with, involving considerable expense. The directors have tied up $20,000 of the money, which belongs to Mr. Wullf from the proceeds of the ore, and he is handicapped in his future working. Only a few men are employed in order to keep possession.

Gilpin County.

(From an Occasional Corresp ondent.)

It is reported that the Indiana property on Quartz Hill has been sold and that one payment has been already made. Mr. Dickie, formerly of the Yankee Girl mine, represents the purchasers.

Messrs. Harker and Williams, who so successfully operated the Frontenac mine under bond and lease, have taken a lease and bond on the Adaddeli property, the eastern extension of the Frontenac.

Duquesne Gold Mining Company.—A Pittsburg company, known as the Duquesne Gold Mining Company, has been organized, and is now operating the Kent County group of claims in the Nevadaville District. The group consists of the Kent County, Soden, Mariposa and Leonine. These claims cover between 3,000 and 4,000 ft. on each of two practically parallel veins. The main shaft is at the present time 1,000 ft. deep. The 500-ft. and 1,000-ft. levels will be run west on ore now showing in the breasts. The Kent County was formerly a good paying property, and indications are that it will be again. The property is under the management of Mr. F. C. Alsdorf.

Nevadaville.—The mines of Nevadaville are probably producing at the present time as much as, if not more than, at any other period of the county's history. The most recent additions to the producing list are the Indiana and the Shafts. Both properties are operated by home pools. Mr. Alfred Rickard is part owner and manager of the former, and Mr. Henry C. Bolsinger of the latter. Mr. Bolsinger is also a large owner in the Hubert, in which, it is said, a new and rich chimney of ore has been encountered recently.

Pine Creek District.—Mining in this district is being resumed with vigor. The snow of last week is rapidly melting and the roads becoming more passable. The most prominent company now operating in that district is the Gold Standard, of Denver. The company owns six claims, the Gold Standard, Nancy Lee, Nancy Hanks, Happy Medium, Allerton and Dictator. Patent has been applied for on the group and the survey is about completed. The group will be worked by inclined shafts and tunnels. The shaft in the Gold Standard at a depth of 50 ft. shows a good-sized vein of free-milling ore.

La Plata County.

(From Our Special Correspondent.)

Columbus.—The new owners are pushing work on this property, and 30 men are employed building the wagon road from the river up to the mine to make it possible to get up machinery and supplies. The management will continue sinking as soon as pumping machinery can be put in place. The last sample taken from a depth of 40 ft. gave, as an average from 5 ft., $300 per ton in gold.

Lewis Mill.—This mill is being remodeled by Messrs. Traschler and Pret, who are preparing to introduce their process for treatment of low-grade refractory ore. If this process will only hold good for one-half what is claimed for it it will be of great benefit for the La Platas, which abound in this kind of ore. What the process is I have not been able to learn, and it does not matter until its usefulness is demonstrated.

Little Kate.—The Allen Mining Company has just completed a test run of 100 tons of ore from this property in Moffat's mill. The company is satisfied that the ore is free milling, and will erect its own mill at or near the mine in Basin Gulch.

Small Hope.—This property made a shipment of high grade ore taken out during development work last winter.

St. John.—This mine is in a good body of high grade tellurium ore, and Mr. Dwyer expects to commence shipping shortly.

Mineral County.

Kentucky Belle Mining Company.—Work will be at once commenced on both the Kentucky Belle and Kentucky Belle Extension company at Creede and a large force of men will be employed.

Ouray County.

(From Our Special Correspondent.)

American Nettie Mining Company.—This company has resorted to the use of electric drills, and as a consequence a number of men have been laid off, pending the result of the new venture.

Guston.—The Gennessee-Vanderbilt, of the Guston property, is to be equipped with a new pump, a capacity of 300 gals. per minute. It will be placed at the 750-ft. level as soon as the station is completed.

Mineral surveys approved by the United States surveyor general for Colorado during the week ending June 1: 9462, Denver, Gold Chief and Gold Bug; 9473, Pueblo, Hoosier; 9245, Pueblo, Troy; 9487, Pueblo, Blue Spring; 9414, Leadville, Mud Sill, Olive B., Senator Tabor and Valley Queen lodes; 9463, Pueblo, Bimetallic; 6472, Am., Montrose, Iowa Chief; 9190, Am., Pueblo, Ida No. 1; 265, Am., Pueblo, Madagascar; 5800, Am., Central City, Thunderbolt and Sampson lodes.

Silver Spur and Millersburg.—These claims have been leased and bonded for one year to D. McNeil et al. Both claims are good gold and silver producers, and work has already commenced with a good force of men.

Wedge.—On this property the shaft will be sunk 200 ft. additional, a contract having recently been let for that purpose. A force of 12 men is at work.

Yankee Girl.—The mine has suspended operations indefinitely. The pumps were pulled last week, and a large force of men is now idle. The Yankee Girl was hitherto one of San Juan's greatest silver producers.

San Miguel County.

Smuggler—Union Mining Company.—Superintendent Billingsley, of the Smuggler Union Mill, intends starting all of the vanners up to-night by steam power, as the electric power is at this time inadequate.

Special Session.—At this mine a new cross-cut was started this spring for the purpose of tapping the vein at a greater depth, and is now in 80 ft. says the Telluride Journal. About 200 ft. of work has been done already on the vein and it has been found of good average width and runs high in gold all the way through.

FLORIDA.

Phosphate shipments from Port Tampa for the month ending May 31st were as follows: May 2d, 3,305 tons pebble for Helsingborg, by Land Pebble Phosphate Company. May 9th, 2,175 tons rock for Rotterdam, by Bradley Phosphate Company. May 13th, 1,340 tons pebble for Philadelphia, by Bone Valley Phosphate Company. May 14th, 975 tons pebble for Carteret, N. J., by Florida Phosphate Company, limited. May 16th, 751 tons pebble for New York, by Boone Valley Phosphate Company. May 20th, 2,178 tons pebble for Harbourg, by Florida Phosphate Company, limited. May 23d, 954 tons pebble for Baltimore, by Florida Engineering Company May 29th, 2,891 tons rock for Stettin, by Louis McLain. May 31st, 2,827 tons rock for Stettin, by Franco-American Phosphate Company; 1,658 tons pebble for Carteret, N. J., by Florida Engineering Company.

Polk County.

Advices received from Lakeland state that all the phosphate mines in that region are working full capacity. Recently a railroad extension has been made to Bone Hill, and this plant is shipping large quantities.

GEORGIA.

Cherokee County.

(From Our Special Correspondent.)

Some Colorado miners have recently commenced prospecting in the southwestern portion of this county by re-opening some of the shafts on gold properties, from which ore was extracted 20 years ago. At the Cox mine, a short distance from Altoona on the Western & Atlantic railroad, they extracted some 20 tons of ore and had it milled at the Huntingdon Mill of the Osceola Gold Mining Company, located a short distance from the mine, with satisfactory results. The ore is a sulphuretted quartzite occurring as a bedded vein in the mica schist country rock, and in the same belt of formation as occurs the Franklin mine in the northeastern portion of the county. The vicinity in which the Cox mine is located, has produced, it is said, large amounts of placer gold, and even to-day, dust and nuggets are carried to Acworth and other towns in the vicinity by miners who obtain them by sluicing in the old placer diggings. For about 1½ miles along the strike of the formation, in which is located the Cox mine, the ore has been worked out at places to a depth of 40 ft. This was done in the past, and the old openings evidently abandoned when the ore became sulphuretted.

Chester.—This mine is owned by Geo. T. Chester, Buffalo, N. Y., who has just received an air compressor and drills. Operations at this mine were suspended three weeks ago, when the hard formations were reached in the vertical shaft at a depth of 75 ft. The sinking will be resumed at once, with a view to thoroughly prospect the ore body at depth in the hard formation. Should this prospect prove satisfactory, a plant for the treatment of the ore will be erected, but Mr. Chester proposes to determine the value of the ore body to a depth at least of 150 ft. before any plant is put up.

Clippinger.—At this mine, owned by Messrs. Cox & Clippinger, Ball Ground, Ga., a 5-stamp mill has just been erected. The property is located about three miles north of the Franklin mine. The ore body is a bedded vein in a semi crystalline, garnetiferous slate country rock. The development work consists of a tunnel run in at the base of the ridge with the strike of the vein. At the mouth of this tunnel the ore body is 9 ft. thick, and the owners inform me that 100 tons of the ore milled sometime back at the Franklin mill, yielded an average of $4 per ton. This thickness is not maintained for any great distance, as is shown in the tunnel. Apparently, development will show that the ore body is a series of lenses so characteristic in this section. Mr. Cox, who is a machinist, has introduced a new method of catching quicksilver and amalgam, which may pass over the plate. He has constructed of plate copper three revolving disks, each 36 in. in diameter, which are set one above the other connected by a vertical shaft. The tailings, after leaving the plates, pass on to the topmost disk with an upward movement from center of the disk to circumference. There they discharge on to the second, passing with a downward movement from circumference to center where they again discharge on to the lowest disk and pass with an upward movement from center to circumference, whence they are discharged into the sluice box. Each of these disks is mercurialized, and any amalgam or fine gold which has escaped from the plates is caught. Mr. Cox informed me that he had obtained very satisfactory results from an arrangement constructed somewhat similar to this, but with less mercurialized area for the tailings to pass over.

Franklin.—This mine, at Creighton, in the northeastern portion of the county, is being operated with the usual force of about 100 men. A new working shaft is being sunk on an incline of about 65° at a distance of about one mile from the old vertical shaft to the southwest. The ore body at this point was prospected sometime ago, and about 100 tons of ore stoped out, of a much higher value than has been mined in the deeper levels in the old works. Samples taken from this dump assay as high as $53 per ton, as I am informed by the superintendent, O. J. Theis. The concentration and barrel chlorination proves successful. The total cost of treating the raw ore only averages 65c. per ton, and the treatment results in the extraction of 94% of the assay value.

Osceola Mining Company.—The Georgiana mine, is owned by the Osceola Mining Company, New Orleans. Active operations have been recommenced by sinking a new shaft to crosscut the ore body. A point 128 ft. vertically from the surface having been reached, a crosscut tunnel was run to the vein, which has the usual characteristics of being bedded conformably with the country rock and being of lenticular structure. Three or four years ago about 2,000 tons of ore were milled from this mine, which averaged about $5 per ton, and the body varied in thickness from 18 in. to 6 ft. This ore was stoped from an incline depth of 95-ft. The strike of the ore body is northeast and southwest, and the dip to the 95-ft. level, 60° toward the southeast. Below that, in the vertical shaft, it is shown that the dip becomes much flatter. The ore is a very highly sulphuretted white quartz, at the depth at present attained, but above the 95-ft. level becomes much more oxidized, and treatment in the Huntingdon mill was satisfactory, but it is doubtful whether such will be the case when the hard ore now being taken out is treated. The capacity of the mill is about 20 tons per day. The old workings on the mine show that it has been worked out for a distance of 160 ft. along the line of strike, and to a depth of 95 ft. The 128 ft. level, in the vertical shaft, in which ore is now being taken, will give 50 ft. of virgin ground for stoping.

Gwinett County.

(From An Occasional Correspondent.)

Colorado, Wyoming & Great Northern Railroad.—The county clerk of Sweetwater County, Wyo., has received for recording the deed of trust of mortgage given by the Colorado, Wyoming & Great Northern Railroad to the Solicitors' Loan and Trust Company of Philadelphia, of which Theodore Frothingham is president. The company is to furnish $6,000,000 to construct a road between Grand Junction, Colo., and Green River, Wyo., which is to be the main line. A branch line is also to be built from the main line where it crosses the White River west down the river to the Ouray Indian Agency, in Utah; thence up the Duchesne River and Strawberry Creek and down Daniel Creek to Provo City, Utah; also a branch line from the junction of Daniel Creek and Provo River west to Park City, Utah; also from Rangely, Colo., east up the White River to Meeker, Colo. The mortgage is a first lien upon the entire property of the Colorado, Wyoming & Great Northern Railway, including the main line and branches and the little Rock Cliff Railroad, which latter line from Grand Junction north for 10 miles is already constructed. Bonds to the amount of $500,000 are to be issued at once for the purchase of rails, etc., and the remaining bonds as each 5 miles of road is completed. The bonds run for 3 years and bear interest at the rate of 5%, payable semi-annually in gold coin.

Piedmont.—An organization has been effected at Buford, made up of local capitalists to buy and operate the Piedmont gold mine, 1¼ miles from Buford. The property consists of five well defined, true fissure veins, about 20,000 ft. ore vein, 250 acres land, with a mill and buildings. The ore at 57 ft. is solid white quartz, mostly free milling, but carrying some iron and lead sulphurets. It runs $10 on plates; will run $20 to $30 when concentrated and chlorinated. The officers are: Bona Allen, president; L. P. Patillo, secretary and treasurer; F. J. Rothpletz, General manager. A French syndicate has been inspecting some of the other gold properties in the Buford belt, with a probability that they will soon invest.

IDAHO.

Idaho County.

Gold Ring.—On this mine, when work was resumed this spring the tunnel was run 45 ft. on the ledge, and a second one started 20 ft. below. Both

showed up a narrow vein which is said to be rich in free gold and an arrastra has been put up to work the ore already taken out. The owners hope to follow it with a 5 stamp mill as soon as possible.

Tough Nut.—Ore is being turned out from this mine which pays well in free gold. The mill will be kept running as long as possible, but the supply of water is not large.

Owyhee County.

De LaMar Mining Company.—The detailed report for the month of April shows that prospecting was continued on the Wilson vein, showing an average width of 15 in., carrying well in gold. On the Summercamp the main tunnel is now in 2·9 ft.; the vein is .2 ft. wide, of rather low grade. The table of work for the month shaws 3,473 tons dry ore crushed. The assay value of the pulp was $21.25 in gold and $6.94 in silver. The tailings assayed $4.77 in gold and $1.02 in silver, showing a total of 79·46% saved. The total production for the month was 2,338 fine oz. gold and 37,448 fine oz. silver. The value of gold produced was $46,764, and of the silver $22,468; to this is to be added $5,200 for ore shipped, $3,112 surplus on bullion sales, and $908 miscellaneous; making a total of $78,452 for the month. The expenses for the month were $38,369, leaving a profit of $40,083. No work of importance is in progress outside.

MICHIGAN.

Copper.

Atlantic Mining Company.—The May output of the Atlantic mine (275¼ tons) was the second largest in the company's history. In May 29th 228 tons of rock were sent to the mill and an average of 1,082 tons a day were stamped, producing an average of 18·8 lbs. of mineral per ton, or 550,775 lbs. for the month. The mineral averages 78% of refined copper. In 1893 the Atlantic produced 4,222,000 lbs. of refined copper from 315,670 tons of rock sent to mills. The average number of pounds of ingot per ton of rock stamped being a little less than 14 lbs. or exactly 13·375 lbs. The average in the mineral was 17·607 lbs. per ton. In 1894 the Atlantic sent to mill 315,626 tons of rock or practically the same as the previous year, but the amount of copper in each ton of rock was 14·06 lbs., and the yield for a year was a total of 4,437,609 lbs. refined copper. The mineral average was 18·02 lbs. This year the rock continues to improve and has averaged nearly 16 lbs. of copper per ton of rock for the first four months against 14 lbs. for the first four months of 1894. The better results are mainly due to the richer ground in the bottom of the mine, says the Boston "News Bureau," although careful study has enabled the company to improve its mill results.

Kearsarge Mining Company.—The May output of this company was 85 tons of copper.

Osceola Mining Company. During May this company produced 320 tons of copper.

Tamarack Mining Company.—This company's output of copper last month was 800 tons.

MINNESOTA.

(From Our Special Correspondent.)

Considerable quiet work has been done with a drill at the southwest end of the Lake of the Woods this spring for coal, and with some success, if the reports just received from there are correct. At a depth of 110 ft. a vein of coal 5 in. thick was penetrated, and at 135 ft. another vein 4 ft. thick. The hole was bottomed in sandstone. A second hole to the west shows that the dip of the veins was from the lake to the west, at about 2°. In the Little Fork country, in township 69-22, some explorers have been at work this season and say they have found coal. Their exact location is not given, but the township is about 20 miles north of the western part of the Mesabi range. These reports of the existence of coal in Northern Minnesota are not to be relied on as yet, however, and may amount to nothing at all. But there is no question that considerable quantities of float coal or lignite have been brought down from that country in the past year or more, and there is some reason to think that a good quality of the fuel exists in quantity undetermined. Explorations for coal were carried on by the Merritts, of Duluth, while they were in possession of Mesabi mines, and they have always claimed they made valuable discoveries.

The exact amounts of ore shipped from the Vermilion and Mesabi ranges in May was 466,367 short tons. For the first week in June, Two Harbors shipped from both ranges 42,000 long tons, and Ashland from the Gogebic, 90,430 tons.

The annual meetings of the Minnesota Iron Comany and the Duluth & Iron Range Railway were eld in Duluth on Monday. All old officers and dictors were re-elected. The Duluth & Iron Range, will, it is expected, soon order the construction of its newly surveyed line from Two Harbors to the top of the hill, and from there direct to the Mesabi in town 58-17, cutting off considerable in distance of haul for all its Mesabi ore and in grades for all its ore from both ranges. The line will be not far from 5 miles in length. It will reach the Mesabi at a point where the Minnesota company is now doing a large amount of development.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Fayal.—On the two forties of this property there are now shown up not less than 6,000,000 tons of as good ore as lies on the Mesabi, much like the Franklin in texture and quality.

Sauntry.—This mine, in section 5-58-17, north of the town of Virginia, has shown up a considerable body of manganese, in several pits along a narrow line. If mined out as manganiferous iron ore, it will probably go 16 to 17 % and high in iron.

Virginia Iron Company.—This company has given the Minnesota Iron Company an option on its mine at the town of Virginia, for lease or fee, the former at an 18c. royalty and the latter at a flat price, said to be $400,000. In one case there is to be six months' exploration, and in the latter nine. If, as some think, the ore body of the Oliver extends under the taconite into the Virginia, this latter figure is not at all high. There is a body of manganese on the property running about 45 to 50 %. The Virginia people say they have 7,000,000 to 8,000,000 tons in the mine, but it has never been very carefully explored, except by the Minnesota Iron Company.

Iron.—Vermilion Range.

(From Our Special Correspondent.)

Chandler Iron Company.—This company has now the dead work all done ahead for the mining of at least 2,500,000 tons of ore, and all is charged up and paid for. The season's shipping will be not less than 600,000 tons and will reach 700,000 tons if vessels can be had. All mining has been suspended on the original 40.

Minnesota Iron Company.—The company is shipping 2,500 tons daily, 1,000 tons being hoisted and the rest from stock piles. The visit of inspection of the company's leading stockholders this week was very satisfactory.

Pioneer Iron Company. At this property H. B. Sturtevant has assumed charge and will operate the mine. His knowledge of mining matters will do much to give this property the place it deserves next year. Very few mining men realize the importance of the Pioneer, but the statement that the Chandler ore body is a part of the Pioneer will give an idea of what the mine will prove to be. The fee is held by Duluth and Superior parties who were the discoverers. But little ore will be shipped from the mine this fall.

MISSOURI.

Jasper County.

(From Our Special Correspondent)

JOPLIN, MO., June 10.

While the activity of the past week has been fully up to the last fortnight, and the output of the mines slightly increased, the advance in prices has not been maintained, which indicates that the production is now nearly equal to the demand from the furnaces now in operation. The tone of the metal market continues to improve, however.

The best price realized on zinc ore was $21.50 per ton. Lead sold for $18 per thousand.

The following are the sales as reported:

Joplin, zinc, 1 550,730 lbs.; lead, 423,790 lbs.; value, $23,201. Webb City, zinc, 777,540 lbs.; lead, 111,240 lbs.; value, $9,648. Carterville, zinc, 1,627,420 lbs.; lead, 193,220 lbs.; value, $19,657. Spring City, zinc, 63,140 lbs ; lead, 20,110 lbs.; value, $1,000. Oronogo, zinc, 45,910 lbs.; lead, 18,810 lbs.; value, $760. Zincite, zinc, 51,520 lbs.; lead, 12,020 lbs.; value, $731. Stotts City, zinc, 60,000 lbs.; value, $1,500. Carthage, zinc, 56,000 lbs.; value, $640. Aurora, zinc, 588,000 lbs.; lead, 90,000 lbs.; value, $6,044. Springfield, zinc, 120,000 lbs.; value, $1,140. Galena, Kan., zinc, 1,970,000 lbs ; lead, 714,490 lbs.; value, $29,233. District total output, zinc, 7,003,260 lbs.; lead, 1,583,680 lbs.; value, $93,354.

MONTANA.

Jefferson County.

Elkhorn Mining Company.—This company's detailed report for April shows the usual amount of prospecting work for the month, without any notable result. Arrangements to resume sinking from the 1,750 ft. level are being made, and in the meantime work has been started, a prospecting drift to run north from the shaft. Ore hoisted for the month was 1,041 tons. In the mill department the pans ran steadily through the month. A new can shaft was placed in Nos. 1 and 2 batteries. The table of mill-work shows 1,038 tons of dry ore panned, with an average assay value of 36 37 oz. per ton. The proportion of salt used was 14%. The value of the tailings was 3·33 oz. per ton, showing 91·92% saved in the mill. The batteries were in service 28 days 8 hours, and the pan 29 days. The product for the month was 29 4 fine oz gold and 34,973 fine oz. silver. The estimated value of bullion shipped was $22,770; excess returns on March bullion, $1,574; returns on 38 tons shipping ore, $2,812; total receipts for the month, $27,156. The current expenses were $21,998, leaving a balance of $5,158 as profit for the month.

Silver Bow County.

The following late notes are from the Butte "Inter-Mountain" of recent date:

Alaska Gold and Silver Mining Company.—One of the most important civil cases tried during this term of court was the case of John G. Brady, executor of the last will of T. C. Doran, deceased, vs. the Alaska Gold and Silver Mining Company, says the Juneau "News." This involved the title to the oldest mining location in southeastern Alaska, the claim having been located in 1873. In 1879-80 the defendant opened and developed the claim, erected a 10-stamp mill and expended considerable money. No dividends being forthcoming, the stockholders refused to pay further assessments, the mill and works were shut down and from that day to this the company has done no work on the property. Among those having claims against the company was T. C. Doran, deceased, who had been in its employ as a machinist. Doran settled in Sitka, and, failing to get his money, and no work having been done in 1881 or 1882, he re-located the claim in 1883 as his own, calling it the Cash instead of the Steward, and has ever since worked the same. At that time he was a stockholder in the corporation and the defendant claimed that as such he could not locate the claim for himself but had located and ever since held the same for the company. In 1886 he obtained in this court a judgment against the company upon which there is still due nearly $3,000. Judgment was rendered for the plaintiff.

Anaconda.—At no time in the past five years has there been more development work in progress in the mines of this district than at present. Of course, under the prevailing quotations for silver, the greatest work is being done at the copper properties, and chief among the undertakings is the great tunnel which is now being driven to connect all the properties of the Anaconda Company. From the 900-ft. level of the Anaconda mine a crosscut is being run to the High Ore No. 2, which is already connected with the High Ore No. 1 at the 900-ft. level. In fact, the High Ore, Wake Up Jim, Green Mountain and Mountain Consolidated are all connected at this same level, and just now a force of men is engaged in drifting west from the Mountain Consolidated, and the miners are now beneath the shaft of the Buffalo. An upraise of 300 ft. will be made to the Buffalo shaft, and then the drift will be continued into the Pacific and Poulin ground, and perhaps over to the Yellow Jacket on Missoula Gulch, thus connecting all of the properties of the Anaconda Company by one mammoth tunnel over 1½ miles long. In the near future a person can descend by the Poulin shaft near Missoula Gulch and emerge by the Modoc in Meaderville.

Boston & Montana.—It is generally believed that this company has acquired the Gambetta mine, which was recently transferred to Captain Palmer, of the Butte & Boston, by the owner, J. A. Leggat. The foundation for this statement consists in the fact that at present the workings of the Gambetta are being connected with the 600 ft. level of the Leonard shaft, a crosscut now being driven for that purpose. The property can be worked very economically from the Leonard, principally because the large volume of water encountered in the Gambetta workings has been a drawback to its successful operation. By connecting the two properties, the capacious pumping machinery at the Leonard will be able to successfully handle the water.

Green Mountain.—A strike of fine copper ore was made on the 1,100 ft. level of the Green Mountain a few days ago. The lead has been crosscut for 75 ft., but so far neither wall has been found. The ore is said to be the richest found in any of the Anaconda properties. Grading is actively going on for the bed for the new engine which has been ordered and which will arrive in a few weeks. This engine will be the largest in the State, and will be able to hoist the ore from great depths. The ore in the Green Mountain becomes richer with depth, and as soon as the new engine is placed in position the shaft will probably be sunk a few hundred feet deeper.

Heinze Smelter.—It is understood that F. A. Heinze has secured a contract for the treatment of 75,000 tons of Le Roi (British Columbia) ore at $11 per ton, and that a smelter will be erected at Trail Creek under the supervision of James Breen. It is also said that 50,000 shares of Le Roi stock, which recently changed hands in Spokane, have passed into the hands of Mr. Heinze.

Hibernia.—The west end of the Hibernia, an adjoining claim to the Nettie, is proving a bonanza to the leasers, Messrs. Kornberg & Company. Shipments of ore averaging 300 tons per day, are being made. The ore is treated at the Colorado smelter.

New Sampler.—The new sampling works now in course of construction on South Main street will be in complete running order in three weeks. The 50 H. P. engine and all the necessary machinery have arrived and are peing put in place. It will be the most complete sampling works in the West, and everything will be so arranged that the most of the work will be accomplished with the least expenditure of labor. The improved machinery and the systematic methods which will be employed in the treatment of ore promise to change some of the methods in use and the present prices charged for treating ore.

White Eagle.—A number of Butte men are interested in a mine in Red Bluff called the White Eagle, which is showing up well, and upon which at present five men are employed in development work. This property is situated about 1¼ miles from the Red Bluff mine, and was bonded to the Butte men for $15,000.

NEVADA.

Every day brings new friends into the ranks of the Brunswick lode scheme, says the San Francisco "Report." The board of directors of the Consolidated, California & Virginia Mining Company held a meeting on June 5th, and agreed to join in the combination, and they called a special meeting of the stockholders for an early date, so if nothing unforeseen happens a few short weeks will see a renewed activity all along the Comstock.

Humboldt County.

Keystone Mining & Milling Company.—Application is to be made in the United States Court at

Reno, for the appointment of a receiver for this company, operating in the Vanderbilt district, in southeastern Nevada, and the owner of a valuable group of gold mines, equipped with a ten stamp mill. According to the Salt Lake City papers, Sam T. Godbe is one of the heavy minority stockholders, and the application is to be made by him, through Judge Dillon, of Los Angeles, who is now in the district in company with the superintendent of the properties. T. C. Williams, for the purpose of gathering together the necessary data upon which to base a claim for a receiver. Preliminary filings will be made in the district court at Ploche, but the real work will be done in Reno.

Storey County—Comstock Lode.

Following are extracts from the latest weekly official letters of the mine superintendents:

Alta.—The raise on the 825 level was advanced 9 ft., face in ore averaging $16 per ton. On the 940 level raise No 2 was advanced 11 ft. in quartz, showing occasional bunches of good ore.

Belcher.—On the 1,000-ft. level the northeast crosscut from the north lateral drift is out 60 ft., with the face in porphyry and quartz of no value. Hoisted during the week and stored in the ore house at the mine 32 tons of ore, the average top car smples of which show an assay value of $31.16 per ton.

Chollar.—The east crosscut on the seventh floor above the 550 level has been advanced to a total length of 38 ft.; face in hard porphyry. The east crosscut on the 450 level, 30 ft. north of main line, has been driven a total length of 38 ft.; face in porphyry. On the sill floor of the 650 level we are opening out on the same ore which was followed from the 550 level with the winze. It is from 5 to 6 ft. in width and the face samples run from $30 to $40 per ton. When the work is a little further advanced a winze will be started on it. From this point and from the openings on the 450 and 650 levels we have extracted and sent to the Nevada mill for reduction 216 tons ore, the battery sample of which was $29.11 per ton. Shipped during the week 259 lbs. of crude bullion, which yielded $6,300.87.

Crown Point.—The raise from the west crosscut on the 700 ft. level, to connect with the fifth floor of the stope, is now up 22 ft. in porphyry. It will take three or four days to connect and put in chute. Extracted and shipped the past week to the Mexican mill for reduction 600 tons of gold ore. The average battery sample was $9.46, of which $8.46 was gold.

Hale & Norcross.—The work of retimbering the main shaft near the 975 level will soon be completed. 975 level—Have timbered up the north drift from No. 1 west crosscut, where it connected with No. 2 west crosscut. South drift from No. 2 west crosscut was advanced to a total length of 166 ft. Face in clay, quartz and porphyry. Have worked in the face of this drift only a part of the past week, as we had to repair the drift back from the face. Have resumed work in the face of No. 3 west crosscut near our northern boundary and advanced it a total length of 120 ft. Face in porphyry and stringers of quartz. Intermediate level—We continue stoping south on small streaks of ore above this level. Have done considerable timbering on this level the past week. Extracted during the week 5 cars of ore assaying per mine car sample $32·81 per ton. The average battery assay of the ore milled at the Brunswick mill (180 tons) was $54.42 per ton. Percentage obtained of the average battery assay 92·35%. The assay value of the bullion (the total yield of the ore) is: Gold, $4,363.61; silver, $4,697.40; total, $9,061.61, which was shipped to the San Francisco office.

Justice.—From the south drift from the bottom of the winze, 32 ft. below the drain tunnel, a total of 35 tons of ore has been extracted. This ore has been worked at the Douglass mill and yielded in bullion $2,375.

Occidental.—In the 500 level the winze from the north drift has been sunk a total length of 40 ft.; the bottom is in ore of the average assay value of $54 per ton. In the 550 level the west crosscut is in a distance of 182 ft. The face is in porphyry and clay, with seams of quartz carrying value. The north drift from west crosscut is now in 35 ft., the face showing 2 ft. of pay ore.

Potosi.—The east crosscut from the end of the south drift on this level is out 108 ft.; the face is in hard porphyry. On the tenth floor of the raise above the 550 level we are following a streak of pay about 18 in. wide of fair assay value, from which was saved during the past week 15 tons ore, the car samples of which averaged $29.23.

Savage.—On the 950 level the north lateral drift, started from the west side of the station, is advanced 110 ft.; face is in quartz and porphyry. The south drift from the station is advanced 16 ft.; face is in low grade quartz. From the face of the south drift, started from the east drift, we have started an east crosscut and advanced the same 12 ft.; passing through 2 ft. of fair grade ore. The east crosscut started from the south drift, 20 ft. from the east drift, passed through 25 ft. of quartz and reached the east clay of the vein. The west crosscut started from the face of the north drift, fourth floor, is advanced 35 ft.; face shows some good ore. On the 1,000 level, at a point 40 ft. back of the face of the east crosscut, we have drifted south on a streak of ore 20 ft.

Segregated Belcher.—On the 200-ft. level the southwest crosscut from the south lateral drift is out 74 ft.; the face shows porphyry. On the 300-ft. level the joint Belcher south drift is now out 237 ft. from the Belcher shaft. The face is in quartz of no value. Hoisted during the week and stored in the ore house at the mine 15 tons of ore, the average top car sample of which shows an assay value of $19 per ton.

Sierra Nevada.—The north drift started at a point 340 ft. west from the mouth of the Layton tunnel was advanced to a total length of 120 ft.; face in quartz of low value. The west crosscut started at a point 200 ft. above the Layton tunnel was advanced to a total length of 100 ft.; face in quartz and porphyry.

OHIO.

At Columbus, on June 10th, the vote of the Ohio miners, as to whether they would accept or reject the proposition of the operators to pay 51 cents for screened coal per ton for mining, resulted: For acceptance, 5,051; against, 4,351; majority, 740. The State miners' officials say in their circular to the miners of Ohio: "You will thus see that the provisional agreement made between the operators and your delegates on June 1, 1895, has been ratified and accepted by the popular vote of the district. This makes the agreement valid. Locals will govern themselves accordingly and will resume work under the provisions of said agreement. It must be borne in mind that, distasteful as the terms of this agreement are, we have hopes of its being only temporary. It is only binding in so far as the circumstances continue which forced its acceptance. If those circumstances change, which we are in hope of, we expect that better terms will be within our probabilities ere long." Secretary McBride, of the National Association, says the Ohio miners acted wisely in accepting the offer of the operators, and if the Pittsburg miners will do as well they will be in a position to take an advanced step by the time the fall trade opens.

PENNSYLVANIA.

Anthracite Coal.

The Lehigh Valley Coal Company has decided to pay its miners for the last half of May and the first half of June, in the Schuylkill region, a rate of wages which will be but 10% below the $2.50 basis, notwithstanding the fact that the committee from the Schuylkill Coal Exchange has determined the rate at 15% below. Like the Philadelphia & Reading Coal and Iron Company, it refused the additional 5%, leaving the rate the same as it was last month.

UTAH.

Salt Lake County.

Green Onyx Company.—This company, with a capital stock of $125,000, divided into 25,000 shares of $5 each, has filed its articles of incorporation, 10,000 shares going into the treasury to be disposed of, and the proceeds thereof to be applied to the development of the claims. The president of the company is Otto Hudson, the vice-president Hiram Beck, and the secretary and treasurer W. T. Beattie. The property consists of three onyx claims situated in Miners' Canon.

WASHINGTON.

Pierce County.

Tacoma Smelting and Refining Company.—This company's statement for the month of May shows 59 men employed. The pay-roll amounted to $5,166, and in addition $848 was paid for wood choppers and teams, making a total of $6,014. Payments to the Custom House for duty on imported ore amounted to $2,667. The product of the smelter for the month was 3,600 bars of bullion, weighing 369,178 lbs. The contents and value of this bullion were as follows: 1,862 fine oz. gold, valued at $38,490; 39,174 fine oz. silver (at 67c. per oz.), $26,246; 366,364 lbs. lead (at $3.07½ per cwt.), $11,266; total value of product, $76,002 for the month.

WYOMING.

(From Our Special Correspondent.)

The Wyoming oil fields must become the scene of great activity. In anticipation of this, operations are already being pushed and every indication points to work on a large scale in the very near future. The following is an extract from a report made by Robert Hutchinson, oil manufacturer and refiner of Spring Vale, Glasgow, Scotland, on samples of Wyoming oils lately sent him for analysis: "The body is far in excess of any mineral oil I have ever seen. Indeed, it is so heavy that it appears to me that it would require to be thinned down by mixing with lighter oil. This would be a great recommendation as to its merits in the eyes of consumers. After being refined, the oil has a body superior to the Russian product. This means that it has a greater mercantile value than the latter oil, which sells at wholesale at about $23 per ton."

The bulletin on the heating power of Wyoming coal and oil, by Messrs. Slosson and Colburn, has been reviewed in the German and English scientific periodicals.

Manager McCalmont says the Pennsylvania Oil Company will put down a well every month, and will increase the drilling capacity with the demand for oil. It has been demonstrated by actual tests that the Wyoming engine oil will run 100 miles as against 60 for Eastern oils.

Carbon County.

(From Our Special Correspondent.)

Acme.—This mine, at Gold Hill, at the depth of 85 ft., has developed a 4-ft. body of ore that averages $200 per ton, gold. A lot of 160 lbs. taken from the pay streak, pulverized by hand and washed in an ordinary gold pan, yielded 13 dwts.

Green River Placer.—The rush to the placer diggings at the head of Green River still continues. Hundreds of people are going there every week.

Inter-Ocean Placer Company.—This company, on Spring Creek, is making good headway, and will soon commence sluicing. The gold on this property is quite coarse, and the lowest estimate made by the engineers who examined it was 60c. per yard.

Rock Springs Placer Company.—This company, situated in the Four Mile District, is taking out on an average about $800 per day. The ground averages about 70c. per yard; the gold is quite fine, but is successfully saved by the use of burlaps. Owing to the lack of water, the company will be compelled to close down on July 1st. Only 11 men are required to operate the property.

LATE NEWS.

The employees of the Ames Iron Works, in Oswego, N. Y., boiler and engine works, have received notice of a 10% increase in wages.

The Crane Company, of Chicago, Ill., manufacturers of pipe fittings and brass goods has announced to its 2,300 employees that their wages will be increased 10%, being a restoration of the rate which prevailed early in 1893.

A dispatch from Duluth, Minn., dated June 13th, says that the jury in the case of Alfred Merritt against J. D. Rockefeller, to recover $1,250,000 damages which he claims to have suffered by being led by misrepresentation into the consolidation of his Mesaba mines and railroad with the Rockefeller iron properties, under the name of the Lake Superior Consolidation mines, returned a verdict on June 13th in favor of the plaintiff. The jury fixed the amount of damages at $940,000. The suit was based on the ground that Rockefeller, both by his personal representation in an interview with a brother of the plaintiff at his office in New York City about a year ago and also through the fraudulent representation of his agent, the Rev. F. T. Gates and Charles W. Wetmore, had induced the plaintiff, together with his brothers, to place in a consolidation of iron mining companies their properties on the Mesaba range. The jury decided that the evidence showed that the representations of Rockefeller and his agent as to the solvency of the Gogebic and Cuban mines which were put in by them and their friends were false and made with the intent to defraud the Merritts. The case was fought for 10 days, and experts from all parts of the country testified. Rockefeller refused to come, and his only evidence was by deposition. There is a large family of the Merritts, most of whom were induced to enter the consolidation, and it is said that in a short time suits aggregating $2,000,000 more will be brought on the same basis.

ARIZONA.

Gila County.

Old Dominion Copper Company.—Messrs. Lewisohn Bros., of New York, who held an option on a five sevenths interest in this company, have purchased it. The Globe "Silver Belt" says that Messrs. Lewisohn Bros. are probably acting for a syndicate composed of stockholders of some of the many copper companies whose selling agents they are. Mr. G. M. Hyams, Mr. James Colquhoun and some officers of the Arizona Copper Company examined the mines for the purchasers, and, it is understood, made a favorable report on them. The present condition of the property, according to the "Silver Belt," is good. The work of the past year has been confined to development, and the mine is now in good shape for the production of copper. Superintendent Berray says that, working the present force—a day shift only—ore could be supplied to run two large furnaces. The bins at the smelter are also well filled with ore, the furnaces and machinery in good repair. The flow of water in the mine has shown no increase since the development of the eighth level was begun. With greater depth, however, it is expected that more water will be encountered. To meet this the boiler capacity should be increased. The Old Dominion mine has produced about 70,000,000 lbs. of copper, and is good for many years, there being large blocks of copper-bearing ground not yet touched. Without increasing the capacity of the smelting plant, 8,000,000 lbs. can be produced annually. It is supposed that smelting will begin as soon as the transfer of the property can be made. The old company has been handicapped by having so much of its stock tied up in the Simpson estate, which has not yet been settled up.

Two-fifths interest in the company are still held by the Baltimore parties who managed the property. It is understood that the Lewisohns are negotiating for the purchase of this interest also.

COLORADO.

Lake County—Leadville.

(From our Special Correspondent.)

Triumph.—The strike mentioned in my telegram last week promises to prove the most important yet made. There is good reason to believe that the main ore body has been encountered. The end of the body is not yet in sight, and it is opening up nicely. The stuff averages 5 to 7 oz. gold and 22 oz. silver.

Garbutt.—While shipping steadily from a good ore body, a new drift is now following a streak that

promises to lead into another body. The streak assays ¾ oz. gold, 30 oz. silver and 45% lead.

Julian Mining Company.—This company was incorporated on June 8th, and is headed by Chamberlain Bros., of Denver. The capital stock is $1,200,000. This company will operate a group of claims lying near the New Year, on Little Ellen hill.

Union Leasing Company.—In my last letter I mentioned the big strikes made by this company in several of their shafts. During the past week the find in the Lee Basin ground has developed into a rich and large ore body. It is disclosed to a height of nearly 30 ft. and is over 15 ft. in thickness.

Big Six Company.—Important developments have been made this week. A good streak of lead ore has been opened up that runs 33⅓% lead, 20 oz. silver and ⅓ oz. gold. The body was caught at a depth of 265 ft. and shipments have been commenced.

Eurydice.—This property, near the Lillian ground, has been idle for some years. It was leased this week and is to be actively developed.

Lecompton.—This property in Iowa gulch has been started up after an idleness of two years by lessees. It is a portion of the Nisi Prius ground, and is to be thoroughly explored.

Sixth Street.—Several of the working drifts have entered a good body of iron ore and about 25 tons are being shipped daily.

Chicago & Leadville Gold Mining Company.—This company is operating the Mountain Lion Group. The first shaft is down nearly 200 ft., and there are indications of ore in the bottom. A new shaft was also started on another part of the property recently.

Rex.—The new machinery has been ordered and the shaft will be sunk as originally intended. A large duplex Deane pump has been purchased, with a capacity of 900 gallons per minute. This should be in place and sinking resumed before July 1st. The workings of the Rex have passed through good contact, and there are good indications that the main ore body is not far off.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, June 14.

Statement of shipments of anthracite coal (approximated) for week ending June 8th, 1895, compared with the corresponding period last year:

Regions:	June 8, 1895. Tons.	June 9, 1894. Tons.	Difference.
Wyoming	412,371	682,351	Dec. 269,980
Lehigh	127,730	157,680	Dec. 29,950
Schuylkill	221,551	293,173	Dec. 71,622
Total	761,652	1,133,204	Dec. 371,552
Total for year to date	17,659,648	15,684,297	Inc 1,975,351

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending June 8th and year from January 1st:

Shipped East and North:	1895. Week.	1895. Year.	1894. Year.
Phila. & Erie R. R.	475	26,336	26,007
Cumberland, Md.	‡	‡	1,287,433
Broad Top, Pa.	‡	‡	122,371
Clearfield, Pa.	74,625	2,708,485	1,122,472
Allegheny, Pa.	35,828	1,160,459	474,136
Beech Creek, Pa.	33,900	1,158,550	836,214
Pocahontas Flat Top	†26,975	†1,251,825	1,357,925
Kanawha, W. Va.	7,900	1,457,620	1,025,505
Total	179,703	7,763,275	6,252,073

† Week ending June 1st. ‡ Returns not received.

Shipped West:	1895. Week.	1895. Year.	1894 Year.
Pittsburg, Pa.	35,425	879,974	546,218
Westmoreland, Pa.	36,025	929,280	542,251
Monongahela, Pa.	13,550	371,071	164,111
Total	85,000	2,180,325	1,252,580
Grand total	264,703	9,943,600	7,504,653

Production of coke on line of Pennsylvania Railroad for the week ending June 8th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 101,592 tons; year, 2,431,875; to corresponding date in 1894, 1,173,708 tons.

Anthracite.

The anthracite coal trade is drifting from bad to worse. It is in a decidedly unsatisfactory condition and the prospects of an improvement are far from being bright.

The demand continues exceedingly light. One sales agent reports that some of his best customers are beginning to send in their orders in the belief that the bottom of the market has been reached. We do not find that this is general, however, and it is to the continued light demand that is due much of the weakness of the market.

The companies are mining more coal than they are marketing. Not satisfied with this some of them have given orders to mine four days a week instead of three, because only by so doing can the tonnage this month equal that of May. Every producer knows that in the present state of things in the coal trade the only way of preventing prices from declining still more is by a radical restriction of the output; certain companies say that they are short of stove, but prices do not conform to this. We hear of a sale of stove coal to a Boston dealer at $2.80 on board here. In this market the demand is so light that there is hardly any need to quote prices. We hear that stove has been sold as low as $2.75, but this report lacks confirmation. It is true, however, that current prices are from 25@35c. below the circular, which is $3.35 for stove and $3.20 for the other sizes, net on board. We know of a sale of stove coal at $3.15 alongside, which is equivalent to $3 on board.

Unsatisfactory though such a state of affairs be, it is in regard to the future that the chief anxiety must prevail. Of course, there will be an increase in the demand as the year wears on. But that this fact will raise prices materially is to be doubted. The productive capacity of the collieries is always so greatly in excess of any demand that is likely to spring up, and in the absence of any definite understanding between the companies an increased demand will mean simply an increased supply. Dealers have acquired a habit of "shopping," that is, of going from seller to seller to get the lowest offer. When the fall demand sets in all producers will be anxious to get as great a share of the business as they can and it will be impossible to maintain prices.

Last year the bad times did not really begin until July and the companies obtained fair prices during the first four months. This year the trade has been bad from January 1st.

Bituminous.

There is more business on hand than producers can conveniently attend to, a state of affairs brought about by the much diminished quantity of coal coming from the striking regions, as well as the inability of the other regions to send forward a full supply due to their lack of good transportation facilities. In addition to this, it looks as if consumers were desirous of laying in greater supplies than they usually carry, presumably in order to be prepared for emergencies, such as a spreading of the strikes, etc. All this, of course, is in addition to the regular deliveries on existing contracts and the usual demand.

Of late the section east of Cape Cod has been the biggest consumer, but during the past week the demand has become more general, and other consuming territories have taken coal more freely.

Prices f. o. b. Norfolk, Newport News, Baltimore and Philadelphia are $1.90@$2.20 to the grade, and $2.35@2.65 at the Amboys. Sometimes the railroad will insist upon the small shipper's unloading the cars standing at the shipping ports, and to save himself further trouble the shipper will offer his coal at low figures.

The coal-trade is moving smoothly, and consumers have placed practically all their contracts. There has been more cutting in prices this year than usual. The regular contracting season for the general trade is not quite over yet and drags along later than last year.

Transportation is improved as compared with last week, and the tonnages going forward are much more satisfactory to producers, though there is still room for more improvement. This applies especially to tidewater shipments. The car supply is good on all the roads, though the Pennsylvania is still limiting its customers to a certain allotment of empties. The shipments over the Baltimore & Ohio to its Philadelphia pier, from which so much was expected, have not proved as satisfactory as was hoped.

In the coastwise vessel market there is an improved supply of vessels at the shipping ports, which has naturally tended to reduce rates somewhat. There has been some fog around the Cape which has interfered somewhat with the prompt movement of vessels, but it is now at an end.

We quote the following ocean freight rates from Philadelphia: To Boston and Salem, 70c.; Portland, 70@75c.; Providence, New Haven, New Bedford, Bridgeport and other Sound ports, 70c.; Wareham, 80@85c.; Newburyport, 85@90c.; Portsmouth, 75c.; ice ports 75@85c., and towage where usual. Baltimore, Norfolk and Newport News are 5@10c. above these rates.

Buffalo. June 13.

(From Our Special Correspondent.)

There is nothing new to report on the condition of the anthracite coal trade; prices unchanged.

Bituminous coal quite and market easy, though quotations are nominally unchanged.

Lake freighting of coal quiet; vessel men not anxious to carry coal at present ruling rates. An advance of 5c. per ton secured for Lake Superior vessels since end of last week.

The following are the only items of interest worth presenting:

The Depew Improvement Company—about 2½ miles outside the city line—is now under the control of Messrs. Chauncey M. Depew, H. Walter Webb, H. McK. Twombley, John Jacob Astor, and Dr. W. Seward Ward, they having purchased for $728,000 cash, the controlling interest therein. These men represent the New York Central, the West Shore, the Nickle Plate, the Lake Shore and the Michigan Central Railroad companies. They have also obtained options on hundreds of acres of land adjoining Depew.

The shipments of coal westward by lake from Buffalo from June 2d to 8th, both days inclusive, aggregated 49,985 net tons, distributed as follows: 10,575 tons to Chicago, 23,600 tons to Milwaukee, 7,500 tons to Duluth, 3,000 tons to Superior, 1,125 tons to Sault Ste. Marie, 600 tons to Gladstone, 75 tons to Alpena, 600 tons to Racine and 2,860 tons to Green Bay. The rates of freight, which show an advance of 5c. to Duluth and Lake Superior ports, were as follows: 40c. to Chicago; 35c. to Milwaukee, Marinette and Green Bay; 30c. to Marine City; 20c. to Duluth and Superior; 30c. to Sault Ste. Marie, and 40c. to Racine. Closing fair demand and steady. Vessel men expecting that in a few days to obtain 10c. higher freight.

The executive canal committee of the commercial associations of New York state met in New York last week and perfected plans looking to the bringing out of a large vote next fall in favor of the Nine Million ($9,000,000) Dollar Canal Improvement Bill. A sub-committee will attend to further details and provide funds.

This year to June 1st 48,130 net tons of anthracite and 44,038 net tons of bituminous coal have passed through the Sault Ste. Marie Canal. Last year for same period 79,531 net tons of anthracite and 47,424 net tons of bituminous.

The Canadian Sault Ste. Marie canal and lock, upon which the Dominion Government has spent about $4,000,000, will be opened with imposing ceremonies on the 15th of June. There will be a great patriotic demonstration, an elaborate banquet and any number of speeches.

Chicago. June 12.

(From Our Special Correspondent.)

There is not much demand in this market for anthracite coal. There remains a fair trade, though the average order is for but limited quantities. There are no large contracts being placed, nor are there any in sight. Compared with last year, the market shows up slightly better in the hard coal line. In bituminous coal the sales are good for this season of the year, manufacturing concerns being at the present time a large element in the buying.

Business appears to be on the increase, and shipments of hard coal by way of the lake have already footed up over a hundred thousand tons, and large quantities are being rushed through. The sales of coke have not been large during the week, though there is somewhat of a better inquiry for it. Prices remain broken in both hard and soft coals.

Pittsburg. June 13.

(From Our Special Correspondent.)

Coal.—The continued dry spell has caused a dull and unsatisfactory market; this condition of affairs will no doubt continue until we have a rise in the Ohio. The ports and the harbor are crowded with loaded boats. There are not sufficient tow boats in port to convey the coal to the lower markets. The firm of W. H. Brown & Sons have over 3,000,000 bu. loaded. In rail circles business is not very active; since our last a number of railroad miners have returned to work and better results are expected. Henry Floersheim, the Finleyville coal operator, paid his men on Saturday, and said that he had lost a valuable contract because he could not take it and pay more than the 55c. rate for digging.

At Bellaire, O., the resumption of all the coal mines in the fifth district of Ohio gives 7,500 coal miners, who have been idle for eight weeks, employment at the 51c. scale. Some railroad mines will not be started until fall, having lost all their contracts. The Ohio miners still differ; some accept rates offered, while others refuse.

At Wellston, O., on June 11th, an association was formed to handle and sell all the coal from the Jackson County mines. The capital is to be $5,000,000, and the purpose is to take in all the operators of the district.

Connellsville Coke.—Production did not show many gains, but rather the reverse. The prospect for better trade is now favorable. Viewing the situation from the general condition of the iron markets an advance of 15c. per ton for furnace coke may be expected by July 1st. It is currently reported that at private meetings held by the coke operators it was decided to advance their product to $1.50 per ton f. o. b., cars at ovens for short tons. If this proves correct the coke workers will get another advance in wages. Ovens in blast, 13,528; idle, 4,306. The product for the week in the region estimated at 115,570 tons, as against 124,876 tons the preceding week; decrease, 9,306 tons. The average time made by the 70 plants in blast was 501 days, against 513 days the previous week. H. C. Frick Coke Company made five days at all its plants but two. The McClure Coke Company made five days at all its plants but one.

The great amount of stock coke in the yards has placed the operatives in an independent position in regard to demand. The shipments from the region amounted to 6,973 cars, as against 6,984 cars the week previous, distributed as follows: To Pittsburg, 2,331 cars; to points east of Pittsburg, 1,413 cars; to points west, 3,229; total, 6,973 cars.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 14, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used...	Week ending June 15, 1894. F'ces.	Tons.	Week ending June 14, 1895. F'ces.	Tons.	From Jan. '94. Tons.	From Jan., '95. Tons.
Anthracite.	30	12,350	32	20,124	378,539	495,526
Coke...	41	47,690	122	131,800	2,098,596	3,246,640
Charcoal...	20	3,930	18	3,961	96,028	95,640
Totals ...	91	63,970	172	155,885	2,573,163	3,837,806

Pig Iron.—The market has been expanding during the week, and the volume of sales has largely increased. Prices are strong on the last advance of 25c. on Southern iron, and some Northern furnaces have asked 50c. advance after July 1st. Quotations are as follows: Northern brands, No. 1 X, $12.50 @$13; No. 2 X, $11.50@$12; gray forge, $10.50@$11.

Southern irons. No. 1 foundry, $12,25@$12.75; No.; foundry, $11.50@$12; No. 1 soft, $11.50@$12; No. 2 soft, $11.25@$11.75.

Spiegeleisen and Ferromanganese.—There has been a fair volume of business, particularly in the foreign product Quotations are: $18.75@$19.25 for 20% domestic spiegeleisen at furnace, and $21@$22 for foreign, and $46.50@$47 for 80% foreign ferromanganese at tidewater.

Rails and Rail Fastenings.—There has been some sales for standard sections and more for light rails. These latter are stiffer in price and advancing. Rail quotations remain: Standard rails at tidewater, $22.75. In rail fastenings prices remain. Fish and angle plates, 1@1·05c. at mill; spikes, 1·35@1·40c.; bolts and square nuts, 1·80@1·95c.; hexagonal nuts, 1·95@2·05c. delivered.

Structural Iron and Steel. — There has been little business during the week. Some fair contracts have been awarded and others are in sight. Prices are firm and moving to a higher basis. Quotations are: Angles, 1·30@1·35c.; beams up to 15 in., 1·40@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·45@1·60c. on dock.

Old Material.—The market in this material is very slack, surprisingly so when compared with that in other cities. Nominal quotations remain. Old steel rails, $9.50@$10; old iron tees, $10@$11 per ton; New York railroad scrap, $11.50@$12 per ton, delivered at mill, and yard scrap at $10; wrought turnings. delivered at mill, $8@$8.50; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50, New York; cast borings, $6@$6.50, delivered at mill.

Merchant Steel.—But little business has been noted. Prices firm. Quotations are: Tool steel, 5·65@6·25c.; tire steel, 1·45@1·50c.; toe calk, 1·60@1·70c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85@2c.; open-hearth carriage spring, 1·70@1·90c. crucible spring, 3·40@3·65c.; axles. scrap, 1·35@1·50c. steel, 1·40@1·50c.; bars, common, 1·15@1·30c.; refined, 1·15@1·90c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·50c.; plates, flange, 1·55@1·65c.; firebox, 1·90@2c.; marine, 1·45@1·55c.; sheared, 1·80c.; shell, 1·40@1·50c.; tank, 1·30@1·40c.:

The iron market continues in its upward movement and, as shown by the reports from our correspondents, prices are very firm and expected to advance. Southern furnaces have already made another advance of 25c., and some Northern furnaces have notified their agents of a 50c. rise, and that if current deliveries on contracts are not taken before July 1st. such contracts will be subject to the advance. Consumption is increasing steadily and is now considerably in excess of production. The price of coke will, it is expected, be advanced to $1.50 on July 1st, and a further rise is expected on lake ores. Freights from the head of Lake Superior to South Chicago and Lake Erie ports have been advanced to 85c.

A feature of considerable interest to the market is the proposed move whereby the Tennessee Coal, Iron and Railroad Co.; Sloss Iron and Steel Co., Thomas Iron Co.. and Woodward Iron Co. will appoint a joint selling agent to handle their products in the Northern markets. It is possible that some other furnaces may also enter into the agreement. The result would be to hold prices firm on the Southern product and push it in the market. The idea has come about through the action of several of these companies in sending an agent abroad to introduce Southern iron in European markets.

Buffalo. June 13, 1895.

(Special Report of Rogers, Brown & Co.)

There has been another active week in this field; tonnage running into large amounts under buyers' disposition to anticipate their requirements for the next few months.

The local furnace companies, who have been very conservative in the matter of changing price, have since last report made slight advances, which about represent the advanced cost of raw materials.

Charcoal iron continues to be the weakest thing on the list, but as the price of Bessemer coke iron is now nearly equal to that of Lake Superior charcoal, the few Northern furnaces are considering the wisdom of marking up their figures.

Our quotations below are on cash basis f. o. b. cars Buffalo: No. 1 foundry strong coke iron, Lake Superior ore, $11.75; No. 2 foundry strong coke iron, Lake Superior ore, $11.25; Ohio strong softener, No. 1, $12.10; Ohio strong softener, No. 2, $11.60; Jackson County silvery, No. 1, $15.25; Lake Superior charcoal, $13.00; Southern soft, No. 1, $11.75; Southern soft, No. 2, $11.50; Hanging Rock charcoal, $18.50.

Chicago. June 12.

(From Our Special Correspondent.)

The past week in the Chicago iron market has been the best in the past two years so far as actual sales are concerned. In pig iron especially is the improvement noted, and such has been the demand that an all-around advance of 50c. per ton has been declared on the Northern material, while on the Southern iron an advance of 25c. has been made. Business in billets, steel rails and structural material has been very active, while the mills making this class of material are about filled up.

Pig Iron.—The week's business has been the best of the year, and the aggregate of sales have footed up largely. The feature of the week is the advance of Northern and Southern iron. Two of the largest sales for years were made of Northern iron during the week, one of them having been for 15,000 tons and the other in the neighborhoon of 10,000 tons. Consumers are evidently buying now for fear that the market would advance more in price, as they are sending in their orders for much larger quantities than usual. The furnaces have about all they can attend to for several months to come, and are as nearly independent as to prices as they have been for years.

Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13@$13.50; Lake Superior coke No. 1, $11@$11.25; No. 2, $10.75@$11; No. 3, $10.25@$10.50; Local Scotch No. 1, $11.25; No. 2, $10.75; Jackson County silveries, $14.50@$15; Southern coke, foundry, No.1, $11@$11.25; No. 2, $10.50@$10.75; No. 3, $10.25@$10.50; Southern soft. No. 1, $10.75@$11, No. 2, $10.50@$10.75; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.25@$11.75; No. 2, $11.25; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $11.75@$12; Ohio strong softeners, $13.

Structural Material.—Structural material dealers in this city report an exceedingly good business for the week. They say that most of the business now going is not of the large variety, but a good, active and steady demand for limited lots at what might be deemed fair prices. Quotations are f. o. b. Chicago, mill lots: Angles, 1·35@1·40c.; tees, 1·60@1·65c.; universal plates, 1·40@1·45c.; beams and channels, 1·50c.

Billets.—The Illinois Steel Company reports billet business as very good, in fact so good that it is compelled to refuse much business. The price of billets has advanced to $21 per ton and likely to go higher.

Steel Rails.—A good number of orders were booked for rails during the past week, though none of them for any extensive quantity. The situation is very good, and though prices remain the same, the outlook is decidedly favorable for an advance very soon. The present quotations are $23@$25.

Merchant Steel.—There has been quite an increased sale in the merchant steel line during the week. Business is looking much brighter, and the mills are prepared to look for higher prices very soon. Prices are: Carload lots, machinery, 1·0@1·70c.; tire steel, 1·50@1·60c.,; Bessemer bars, 1·35@1·40c.; toe calks, 2·00@2·10c.; crucible spring 3·40@3·85c.; tool steel, 5½@6½c.; specials, 10·50@11·50c.

Old Rails and Wheels.—There has been some few sales of old iron rails in this market during the week at about $13.50 @ $14. Nothing has been done n old wheels, which are quoted at $10.

Pittsburg. June 13.

(From Our Special Correspondent.)

Iron and Steel.—Trade continues both firm and active; sales have been large, and the demand has not yet been supplied. The furnaces here and at points adjacent to Pittsburg are all sold up, and many thousand tons have been sold for future delivery that is yet in the ore. Certain sales of Bessemer have been made which the delivery extends to the end of the year. Considerable amounts of Southern gray forge have found their way to this market; sales were made at 25c per ton below the price of Northern iron. The iron world has awakened to the fact that the South can produce a good grade of iron at a cost regarded as incredibly low a few years ago, and it causes no surprise now to hear that the South is preparing to compete with other producing sections for a share of the world's markets in iron. In coal the South is preparing to extend her trade throughout South America and to other foreign countries.

Pig Iron.—Business is daily improving. It is currently reported that speculators are in the market and that some large blocks are under negotiation.

Under these circumstances it is no wonder that prices are hardening in every direction. The great difficulty is to get any one to quote for deferred deliveries; order books are full, and as higher cost seems to be inevitable, makers prefer not to quote until they see what the outcome is to be as regards labor, fuel, etc.

The tide of business continues to rise, even as it was falling just two years ago, with surprising rapidity. The gain has gone so far and so fast in some branches that the more conservative fear it may not be maintained, but the period of dullness which comes in each market after an unusual rise brings as yet nothing like a corresponding decline. Industries gain much, halt or fall back a little and then gain once more. The demand for consumption steadily increases as the employment and wages of the people increase.

Steel billets very firm, stocks in hand light; makers are not disposed to quote for late deliveries. Prices still advancing. In the East billets are quoted at $20.50 per ton, with buyers indifferent about contracting, even at those figures.

Steel Rails.—Market firm and active. The big plant of Carnegie's, at Braddock, is employed to its full capacity; the syndicate price, $22 at works, continues to rule. The outlook for the half of the year will be an improvement on the previous half. Reports are current that steel rails will be advanced $2 per ton in the near future.

The Latest — Market firm, all iron and steel products are on the up grade; volume of business large. Bessemer pig advanced 15 to 20c. per ton, steel billets 50 to 75c. per ton; stocks light, muck bar advanced 50c.; blooms, billets and bar ends 50 to 75c. higher; steel and iron skelp very firm; steel wire rods held for more money; sheet bars 25c. higher; old iron and steel rails and scrap material advancing. Advices from Indianapolis say the Merchants' Bar Iron Manufacturers Association adjourned after advancing the price $2 a ton, the third time since March. Pennsylvania, Ohio, Indiana, Kentucky and Illinois were represented.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
10,000	Bessemer, July, Aug., Sept.	$12.35
9,000	Bessemer, Aug., Sept., Oct.	12.50
5,000	Bessemer, Aug., Sept.	12.65
3,000	Bessemer, July, Aug.	12.15
3,000	Bessemer, Aug., Sept, Valley	11.50
3,000	Southern Mill, June, July, Aug	10.25
3,000	Bessemer, July, Aug	12.00
3,000	Bessemer, July, Aug.	12.15
3,000	Bessemer, July to Dec., Valley	11.75
2,500	Bessemer, June, July, Aug., Valley	10.90
2,000	Off Bessemer, July, Aug., Valley	11.60
1,000	Gray Forge, July, Aug., Valley	10.00
1,000	Bessemer, June, July, Valley	11.50
1,000	Bessemer, July to September Valley	11.60
500	Mill, June	10 50
500	Mill, June	10 40
500	Off Bessemer, June	11.15
300	No. 1 Foundry	12.00
200	No. 2 Foundry	11.00

CHARCOAL.

100	Cold Blast	$23.00
100	No. 2 Foundry	16.00
75	No. 3 Foundry	16.00
50	Warm Blast, extra	21.50
50	No. 4 Foundry, Special	17.50
50	No. 2 Foundry	16.00

BLOOMS, BILLETS, AND BAR ENDS.

3,000	Billets, June and July, at mill	18.85
3,000	Billets, July, August and Sept., at mill	18.50
2,000	Billets, July and August, at mill	18.75
2,000	Billets, July and August, at mill	18.80
625	Billets, July, at mill.	18.85
500	Billets, July and August, at mill	18.80

SKELP IRON.

1,000	Wide gr'v'd	$1.37½ 4 m.
800	Sheared	1.50 4 m.
500	Nar'w gr'v'd	1.40 4 m.

SKELP STEEL.

2,000	Sheared	$1.37½ 4 m.
1,000	Wide gr'vd	1.27½ 4 m.
900	Nar w gr'vd	1.27½ 4 m.

MUCK BAR.

1,000	Neutral	$19.75
800	Neutral	19.65
800	Neutral	20.00
500	Neutral	20.25

BLOOMS, BILLETS AND BAR ENDS.

1,000	Blooms and billet ends, delivered	$12.85
560	Bar and billet ends, delivered	13.00
300	Bar ends, delivered	12.90

STEEL WIRE RODS.

3,000	5-gauge, at mill	$24.00

SHEET BARS.

800,	at mill	$22.50
500,	at mill	22.40
200,	at mill	22.25

FERRO-MANGANESE.

200	80%, delivered	$50.00

SPELTER.

150	Prime Western	$2.66

OLD RAILS.

750	Iron Rails, Valley	$14.75
500	Iron Rails Valley	14.50
400	Iron Rails, Valley	14.00
350	Steel Rails, long lengths	12.40
300	Steel Rails, long lengths, Valley	12.00

SCRAP MATERIAL.

500	Old Car Wheels, gross	$10.00
350	Wro't Scrap, net.	10.75
200	Cast Scrap, gross.	9.50
200	No. 1 R. R. Wro't Scrap, gross	10.75
200	Wrought Turn'gs, net	7.00

Philadelphia. June 14.

(From Our Special Correspondent.)

Pig Iron.—The market shows greater strength this week. Large sales of iron have been made. Prices are quoted higher, but there is some uncertainty as to what are fair quotations. No. 1 is given at $12.50@$13; No. 2, $11.75@$12; forge, $11. Both sellers and buyers are less communicative than usual. Some brokers make extravagant claims and assertions regarding business and prices realized, but the more conservative element takes the position that prices are hardening, and that trade prospects are improving.

Steel Billets.—Rash predictions are heard regarding the billet market. Quotations have been made at $21. Business is limited, but buyers are between two fires, and must soon decide. They have hoped without reason that prices would weaken, but the threatening attitude of coke dispells the prospect of lower billets. Stocks are large in some yards and rather low in others.

Merchant Iron.—All mills are doing well. City mills have had an excellent retail trade. Car building orders have been placed in a few interior mills, it is alleged, at 1·10, but the actual price cannot be got at. Manufacturers are quite confidant the summer season will be very good. Selling prices, 1·25@1·35. At a meeting yesterday bars were advanced $1.00 per ton.

Nails.—The demand for nails, both in local and eastern territory continues good, in fact the business has been better for a few weeks than was anticipated by some.

Sheet Iron.—During the week large orders for early delivery were sent to mills. Store sales have increased. Prices for spot delivery have hardened. Competition is less bitter, but the anxiety to capture big orders has by no means subsided.

Skelp.—The orders for skelp now come in without solicitation, though there is some friction just now in certain quarters over terms, buyers insisting on the acceptance of prices named some time ago.

Merchant Steel.—The extraordinary activity in carriage and wagon works all over the country is keeping the merchant steel department of mills busy.

Plate and Tank.—Large boiler plate, steel tank and shell-iron orders were finally gathered into the mills this week at really good prices. The prospect of the continuance of this improvement lightens the woes of our Eastern Pennsylvania manufacturers, It is hard to get at the actual selling prices just now.

Structural Material.—Agents have succeed ed in closing for some additional bridge steel this week.

Quite a number of specifications are being figured on. A great deal of material is wanted. Mills are pretty full of work. Angles, 1·35.

Steel Rails.—The rush for girder rails continues and some eastern track laying has been done with rails from far western mills.

Old Rails.—Transactions of some magnitude have been concluded between rail owners and interior mill men.

Scrap.—The scrap dealers have been quite busy this week.

METAL MARKET.

NEW YORK, Friday Evening, June 14, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. to $1.	June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
8	4.89¼	30⅝	67	.518	12	4.89¼	30⅛	66⅞	.517
10	4.89¼	30 1/16	66¾	.516	13	4.89¼	30 1/16	67	.518
11	4.89¼	30⅛	66⅝	.515	14	4.89¼	30 1/16	66⅞	.517

The market has been very steady, Japan and China have not been much of a factor recently in buying, but India has given tone to the market; not sufficient, however, to advance prices, but to prevent a decline that was impending owing to the nervousness of speculators, which resulted from delay in the Chinese loan negotiations and the caution of Japanese buying.

The United States Assay Office in New York reports the total receipts of silver at 91,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, April, 1895, and years 1895 and 1894 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
April	$2,893,610	$1,933,263	$4,628,954	$990,381	E. $1,593,120
1895..	33,514,726	19,042,983	15,247,330	2,596,537	E. 27,122,53
1894..	20,233,158	6,759,682	16,562,892	3,033,514	E. 27,502,85

Imports and exports of gold and silver in ores for the four months to April 30th are reported as below:

	Gold.		Silver.	
	1894.	1895.	1894.	1895.
Imports	$186,238	$245,855	$2,220,529	$3,120,650
Exports	8,419	26,355	123,999	.....
Excess, Imports	$177,819	$219,500	$2,096,530	$3,120,659

Adding the amounts in ores to those in coin and bullion, we find that for the four months to April 30th this year; the gold exports exceeded the imports by $14.252,243, while the silver exports exceeded the imports by $9.530,143, making the total net excess of exports $23,782,386.

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending June 14th, 1895, and for years from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	.....	$27,470	$795.185	$97.727	E. $669,988
1895..	$32,521,622	19,794,611	15,676,641	782,641	E. 27,621,011
1894..	54,888,972	9,283,818	17,656,657	747,146	E. 62,515,655
1893..	68,859,805	5,927,848	14,636,391	1,247,378	E. 76,320,970
1892..	34,416.692	6.168,015	10,873,731	706,195	E. 38,416,213

The gold imported for the week came chiefly from the West Indies; the silver was from Mexico and South America. The silver exported went to London, with the exception of $50,040 to South America. For the first time in a number of weeks there was no gold whatever exported. In addition to the amounts above reported there passed through the custom-house $255,500 bullion in transit from South America to London.

FINANCIAL NOTES OF THE WEEK.

The course of events during the past week is perhaps best told in our market reports. The rise in prices is unchecked, and is evidently based upon the solid foundation of a growing demand for goods, and consequently for raw materials of all kinds. Unchecked activity among the blast furnaces, with a heavy decrease in unsold stocks of iron, is a statement representative of that presented by nearly all branches of trade. The gain is steady, and there is no apparent reason to expect any serious setback. The crop reports are improving, and there seems to be reason to expect at least a fair return this season, though not an unusually large one.

The reaction in the purely speculative movement has passed, and there is a renewal of activity on the stock markets. The semi-collapse in the African mining market in London has helped to turn buyers toward American securities, and to strengthen a movement which had already begun, and which will probably show itself still more in a few weeks from now.

There seems to be some misunderstanding abroad as to the exact status of parties on the money question in this country. While there are, of course, individual exceptions, it may be said generally that there is no party here which is opposed to bimetallism and the use of silver as money provided it can be adopted by international agreement. The line here is drawn between those who hold that it is necessary to wait for such an agreement on a proper basis, and those who—carried away by the "cheap money" delusion—are willing to put this country upon a silver basis entirely. The very best method, we believe, which could be used in the present controvesy, is that which has been adopted, and the more the subject can be discussed and public opinion educated the better.

The "Commercial and Financial Chronicle" gives the following statement of the total bank clearings of the United States for May and the five months to May 31st:

	1894.	1895	Inc. p. c.
January	$4,060,598,771	$4,407,442,660	8 5
February	3,210,442,334	3,411,146,453	6 3
March	3,760,337,264	4,038,238,490	7·4
First quarter	$11,031,378,369	$11,856,827.603	5·2
April	3,728,423.077	4,529,820,786	14 3
May	3,900.473,922	4,861,357,885	24·7
Total	$18,660,275,360	$20,980.206,274	12·4

The "Chronicle" says: "The improvement is particularly marked at New York and at the manufacturing centers in the Eastern and Middle States; For the country, as a whole, the increase is 24·7%, for the Middle States, including New York, it is 31·2%; for New York by itself it is 35·4%. As we get further away from this section the percentage becomes smaller as a rule. Thus, for the New England States the increase is 17·8%; for the Southern States, 13·6%; for the Middle Western, 12·6%; for the Far Western, only 3·5%, while for the Pacific Coast section there is actually a small decrease—4·8%.

The foreign exchange rates continue high, with comparatively small offerings of bills. This is partly due to light exports and partly to the cessation last week in the foreign purchases of securities. Such bills as were needed, however, have been furnished by the Syndicate, and no gold exports have been made, although the rate remains slightly above the exporting point. The renewal of the purchasing movement which has begun, will increase the supply of bills within a few days, most probably.

The statement of the United States Treasury on June 6th shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	June 6.	June 13.	Changes.
Gold	$99 389,169	$99,589,446	I. $200,277
Silver	25,716,354	26,860,535	I. 1,114.181
Legal tenders	31,343,161	31,095,231	D. 247,933
Treasury notes, etc.	29,198,753	29.545,022	I. 346,26,9
Total	$185,677,440	$187,090,234	I. $1,412,794

Government deposits with national banks on the same date amounted to $15,917,523, an increase of $254,210 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $147,505,280. Against these are held in the Treasury 23,637,568 coined standard silver dollars and silver bullion purchased at a cost of $123,87 ,712, making a total of $147,508,280.

The receipts of the United States Treasury for the week ending June 8th for three years past were as follows:

	1893.	1894.	1895.
Customs	$3,285,419	$2,100,602	$3,077,046
Internal revenue	3,258,718	3,044,965	2,462,903
Miscellaneous	575,976	592,904	812,871
Total	$7,120,113	$5,638.471	$6,352,820

The receipts for the week this year show an increase of $1,084,781 over those of the preceding week, the improvement being chiefly in customs.

The following is the official statement of coinage executed at the Mints of the United States during the month of May and the five months ending May 31st, 1895:

	May		Five months	
Coins.	Pieces.	Value.	Pieces.	Value.
Double eagles.	79,009	$1,580,180.00	672,253	$13,445,060.00
Eagles	8,5 0	85,100.00	317.355	3,173,550.00
Half eagles	499,727	2,498,635.00	978,544	4 892,720.00
Quarter eagles	9	22.50	44	110.00
Total gold	587,255	$4,163,937.50	1,968,196	$21,511,440.00
Stand dollars.	150,189	150,189.00	850,470	850,470.00
Half dollars	178,180	89.090.00	1.790,470	895,235.00
Quar. dollars	556,861	139,215.25	3,114.151	779,287 75
Dimes	620,180	62.018.00	1,490,470	149 047.00
Total silver	1,505,401	$440,503.25	7.248.561	$2,674,039.75
Five cents	1,180,180	74.009 00	5.653,034	282.651.70
One cent	1.350,180	13,501.80	12,532,786	125,327.86
Total minor	2.830,360	$87 510.80	18,185,820	$407,979.56
Total coinage	4,924,046	$4,691,951.55	27,402,577	$24,593 451.31

In May there was a large increase in the number of gold pieces coined, as compared with April, and a decrease in the siver coinage.

The Treasury Department issues the following statement of the amount and kinds of money in circulation in the United States June 1st. Comparison is here made with June 1st, 1894, and holdings of the Federal Treasury are excluded:

	June, 1894.	June, 1895.
Gold coin	$196,799.152	$183.770,430
Silver dollars	51,952,691	52,8:2.570
Subsidiary silver	57,941,25)	59,786,487
Gold certificates	69,374.549	48,579,569
Silver certificates	329,959,959	321,553,171
Treasury notes	140,071,690	117.754.807
United States notes	270 590,089	266,9 8,0:2
Currency certificates	59.250.000	48,245,0.0
National bank notes	199,724,021	206,579,490
Total	$1,675,669,401	$1,606,179,556

Since March 1st—the period practically covering the operations of the government bond syndicate—the country's total money circulation, exclusive of Treasury holdings, has increased $31,644.999. Gold coin in circulation has increased $15,102,330, United States notes $4,949,774, currency certificates $11,320,000, national banknotes $6,690,132. A statement of the total amounts of money in circulation and in the Treasury on June 1st for four years, is given below:

	In circulation.	In Treasury.	Total.
1895	$1,6 6,179.556	$60 ,036,109	$2,209 215.665
1894	1,675.669.4 4	591,044,593	2,2c6,713,994
1893	1,596,151,991	542,707,589	2 138,859,49)
1892	1,620,010,229	626,498,281	:,246,508,510

The amount of money of all kinds in circulation on June 1st, 1895, was equivalent to $23.02 per capita, as estimated by the Treasury.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending June 8th, gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893

	1893	1894.	1895.
Loans and discounts	$414,400 200	$465,403,700	$503,437,600
Deposits	418.925,600	570,880,20.)	565,996,800
Circulation	5,013,500	9,903,500	13,233,500
Specie	69,529,3 0	10 ,475.500	70,783 800
Legal tenders	49,623,0 0	119,162,800	110,383,300
Total reserve	$119,152 300	$219,638,300	$181,167,100
Legal requirement	104,731.400	142,720,050	141,499,200
Surplus reserve	$14,420.900	$166,918,2.0	$39,667,900

Changes for the week this year were increases of $890,400 in loans, and $142 800 in specie; decreases of $1,553,350 in surplus reserve, $1,754.300 in legal tenders, $232,600 in deposits and $22,700 in circulation. The statement, upon the whole, shows a healthy increase in business.

The Bank of England on Thursday, June 6th, reported its gold holdings at £37,397,728, showing a decrease of £446,765 as compared with the corresponding date last year. We have now passed the period in 1894 when the bank commenced to show an extraordinary accumulation of money, and the comparisons will show a decrease for some time to come. As compared with 1893, the gold holding this week shows an increase of £8.001,343. The bank shows a net increase in bullion for the week £375,852, which more than covered an increase in deposits and other accounts, so that the proportion of reserve has risen a little, being 62·85%, against 63·17% last week and 70 62% a year ago.

The Bank of France, on Thursday, June 13th, reported its specie holding at 2,045,100,300 fr. gold and 1,252,418,000 fr. silver, an increase of 262,579,321 fr. gold and a decreaee of 24.665.542 fr. silver, as compared with the corresponding week last year. Changes for the week were a decrease of 3,575,000 fr. gold and an increase of 1.350,000 fr. silver. The bank's deposit and reserves are increasing slightly, while the discounts have been somewhat contracted, in preparation, it is said, for the Russian-Chinese loan.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$70,783,300
1894	.....	.....	100,475,400
Bank of England	$186,988,640	.....	186,988,640
1894	189,222,465	.....	189,222,465
Bank of France	109,020,000	$250,183,600	659,503,660
1894	356,504,216	255,416,708	611.920,924
Imp. Bank of Germany	.....	.....	268,630,000
1894	.....	.....	233,850,000
Austro-Hungarian Bank	96,131,000	67,546,000	163,677,000
1894	51,509,000	81,742,000	133,251,000
Netherlands Bank	21,470,000	35,242,000	56,712,000
1894	22,579,000	35,165,000	57,744,000
Belgian National Bank	.....	.....	21,895,000
1894	.....	.....	22,955,000
Bank of Spain	40,021,000	62,293.000	102,314,000
1894	39,590,000	43,500,000	83,090.000
Bank of Italy	59,940,000	10,070,000	70,010.000
1894	.....	.....	.....
Imp. Bank of Russia	274,075,000	55,095,000	329,170,000
1894	.....	.....	.....

The return for the Associated Banks of New York is of date June 8th; all the others are of date June 13th, except the Bank of Italy, whose return is dated May 10th, and the Bank of Russia, April 16th-28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

The total issues of new capital in London this year up to June 1st, amounted to £41,967,086, which compares with £26,428,664 for the corresponding period last year; £19,941,654 in 1893; £45,802,851 in 1892, and £53,271,159 in 1891. Money still continues very abundant in London, and rates of interest are lower than ever before, but the new issues, though much greater than in 1894 and 1893, have not reached the high figures of 1891.

The new Chilean loan, which is for $10,000,000 at 4½%, was brought out in London this week at 94, and was subscribed for many times over. The loan is made for the purpose of completing the resumption of specie payments.

Shipments of silver from London to the East for the year to May 30th are reported by Messrs. Pixley & Abell's circular as below :

	1894.	1895.	Changes.
India	£2,323,335	£1,627,380	D. £695,975
China	1,660,755	1,084,567	D. 576,188
The Straits	577,702	294,735	D. 282,967
Japan	241,800	105,000	D. 136,800
Total	£4,803,592	£3,111,682	D. £1,691,910

Receipts for the week this year were £1,000 from Capetown, £1,100 from the West Indies and £152,000 from New York. The shipments for the week were £101,050 to India and £22,500 to Hong Kong in bar silver; £19,630 to Penang, £8,300 to the Straits and £19,994 to Hong Kong in Mexican dollars. This makes a total of £123,550 in bar silver and £47,924 in Mexican dollars, or £171,474 in all for the week.

Indian exchange is stronger this week with a rise of 1/16d. to 1/8d. per rupee. The strength is chiefly due to increased exports of cotton from India, and to a demand from China springing out of the heavy rice exports to that country from India this year. Chinese purchases of Council bills have been a more important factor in the exchange market this year than usual. There is still a moderate gold movement to India but it is not yet large enough to offset the other elements in the increased demand for Council bills.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.53¾	$0.53¾
Peruvian soles and Chilean pesos	.50	.52
Victoria sovereigns	4.87	4.90
Twenty francs	3.89	3.92
Twenty marks	4.80	4.85
Spanish 25 peseta	4.78	4.85

Other Metals.

Copper.—The market has not shown much life, but, on the whole, is very firm. The rather lower quotations of g. m. bs. received during the earlier part of the week from London influenced buyers somewhat, but sellers not at all, and when the former found that they could not get copper below the market they paid full rates; thus, though not a large business has resulted, the market must be called very firm indeed, and the scarcity of the finer grades of copper continues. Lake copper is very strong at 10¾ and electrolytic copper at 10½@10⅝. Business in casting copper has been done at 10c.

There were some rumors that a sale of the Anaconda property had been effected to European buyers, but they could not be confirmed. In the meantime it has been learned that the company has been re-organized, certificates having been issued for 300,000 shares at $100 each, or 30,000,000 in all.

The sale is also reported of the control of the Old Dominion Copper Company's mine to a Boston syndicate on private terms, and it is understood that production, which has been suspended for the last eight months, will be resumed at once.

Consumption of copper continues on a very large scale. It is confirmed from all sides that orders are coming in at a very satisfactory rate, and manufacturers are rather busy.

G. M. B's declined during this week to £42 5s., but afterwards hardened again, and ths close is very firm at £42 17s. d6.@£43 for spot, and £43 5s.@£43 7s. 6d. for three months prompt. Consumption abroad is also said to be very large, and there is a good demand for all grades of copper. For refined and manufactured we quote: English tough, £45 15s.@£46; best selected, £46 10s.@£47; strong sheets, £52 15s.@£53; India sheets, £50 5s.@£50 10s.; yellow metal, 4⅝d.

Recent sales of furnace material in England are reported by Messrs. James Lewis & Sons' circular as follows: 145 tons Montana matte, 9s. per unit; 37 tons Chile ore, 20%, at 7s. 9d. per unit; 455 tons Chile carbonate ore, 20%, at 8s. 4¼d. per unit. In addition sales of 2,500 tons American argentiferous matte and of 1,400 tons Mason & Barry ore, 6% copper and 45% sulphur, are reported on private terms. There is a demand for furnace material which at present is being met chiefly by Chile ore and regulus.

Exports of copper from all United States ports during the month of April are reported by the Treasury Department at 10,478,920 lbs., against 11,035,175 lbs. in April last year. In addition to this copper, there were 241 tons of copper ore exported this year in April.

The following figures give the production (in tons of 2,240 lbs.) of copper in the United States, and also by the cheap foreign mines, and the exports from the United States for May and the five months ending May 31st :

Production fine copper, long tons :	May. 1895.	Five months 1894.	Five months 1895.
Reporting mines in U. S.	13,260	59 979	58,971
Pyrites and outside sources, U. S.	1,600	6,700	8,000
Reporting foreign mines	7,400	37.682	35,519
Total production, tons	22,260	104.361	102,490
Exports from U. S., fine copper	5,450	31,956	24,893

The total production for the five months shows a decrease of 1,871 tons, or 1·8% from last year. The United States exports show a decrease of 7,063 tons, or 28·5% this year.

Chilean Copper Market.—Messrs. Jackson Bros. report under date of May 11th as follows: Sales of copper have again been above the average, amounting to about 21,000 quintals for the fortnight. Unfortunately, the majority of these were made early in the fortnight before the rapid rise in Europe took place, so that smelters have been unable to benefit by the higher quotations. We quote for bar copper, cash on shore, $56.63 (Chilean) per metric quintal; coast brands, $57.17 per metric quintal f. o. b.; for regulus 50%, we quote $24.24 (Chilean) f. o. b. per metric quintal, and for copper ores, 10%, $3.25 f. o. b. per metric quintal.

Copper Exports.—The exports of copper from the port of New York during the week ending June 14th, 1895, as reported by the New York Metal Exchange, were as follows:

Copper:		
Havre—La Bourgogne	Ingots	50 tons
Liverpool—Cevic	Wire rods	75 "
" "	Pigs	213 "
Swansea—Boston City	Pigs	100 "
Bordeaux—Chateau Lafitte	Bars	50 "
Liverpool—Umbria	Ingots	10 "
" "	Pigs	50 "
Rotterdam—Maasdam	Ingots	170 "
" "	Pigs	50 "
" "	Plates	126 "
" "	Bars	50 "
Copenhagen—Hekla	Bars	30 "
Matte:		
Liverpool—Germanic		99 "
Liverpool—Cevic		27 "
Swanzea—Wells City		22 "

Exports of copper from Baltimore for the week ending June 14th are reported by our special correspondent as follows:

Hamburg—Italia	4,081 plates	78,400 lbs.
" "	Ingots	186,540 "

This is a total of 974 long tons of copper and 148 tons of matte from New York, and of 118 tons of copper from Baltimore; making in all 1,092 tons of copper and 148 tons of matte for the week.

Tin.—The market has fluctuated considerably, and some sales of tin took place during the week at 13·85. Since then values have hardened, and to-day prices close firm at 14¼ for spot and June, 14¼ for July, and 14·15 for August-December. The consumptive demand has been decidedly better lately, but the arrivals have also been heavy.

London opened on Monday last at £62 15s. for spot, and declined to £61 17s. 6d., afterwards reacting, closing to-day at £63 7s. 6d.@£63 10s. for spot and £63 15s.@£63 17s. 6d. for three months prompt. The market is firm, but there is not much doing.

Messrs. De Monchy & Havelaar report the production of Billiton tin for the year ending April 30th, 1895, at 82,424 pikuls, against 78,595 pikuls for the preceding year. The highest production ever reported far the Billiton district was 106,246 pikuls in 1891 and 1892. The average production for 10 years past was 86,558 pikuls per year. The pikul is equal to about 135 lbs.

The next public sale of Banca tin will be held towards the end of July.

The total imports of tin into the United States during the month of April as reported by the Bureau of Statistics of the Treasury Department were 4,529,472 lbs. as compared with 2,612,234 lbs. in April, 1894.

Lead has been rather uninteresting and quiet. Some sales have taken place at 3·30, but there is neither much demand nor any pressure to sell.

The foreign market has given way, and foreign lead is quoted £10 7s. 6d.@£10 3s. 9d. for Spanish, and 2s. 6d. more for English.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Since our last report the lead market has ruled very strong; large sales have been made at 3·07½ and 3·10 according to brand and quality of the metal. It is further reported that large sales for July have been made at a figure as high as 3·12½. There has been a good and steady demand from consumers all through the week.

Spelter continues very firm with offers scarce. There are hardly any stocks left with the producers, and we have to quote 3·70@3·75.

Good ordinaries in London are quoted £14 10s. and specials £14 12s. 6d.

Antimony is disappointing its friends: it remains stagnant at 8c. for Cookson's and 7c.@7½ for Halett's. Other sorts may be quoted as follows: U. S. French Star, 7½c.; French E. B., 7¾c.; Japanese, 7c.

Aluminum.—The standing quotations, according to producer's price list, are given below, the three prices named being respectively for small lots, for orders of 100 lbs. or over, and for orders of one ton or over: No. 1 metal, over 98% pure, in ingots ready for rolling, etc., 60c., 58c. and 55c per lb. No. 1 metal, in ingots for remelting, 55c., 52c. and 50c. per lb. No. 2 metal, over 94%, but less than 98%, in ingots for remelting, 53c., 50c. and 48c. per lb. Rolled sheets, No. 1 metal, 80c.@$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Tubes, from 14c.@$3.15 per linear foot, according to thickness and diameter. Castings, from 90c. per lb. up, according to pattern and size of order.

Abroad the price is fixed by the Neuhausen Company, which quotes 5 fr. per kilo.—equivalent to 45c. per lb.—at works in Switzerland for small orders; a discount is made on large sales. Quotations in Paris, for large orders, are 5 fr. per kilo. for ingots; 6 fr. per kilo. and upwards for sheets; 10 fr. per kilo for wire, 0·5 mm. and over; 15 fr. per kilo. and upwards for sheets. For small orders the quotations are 6·50@7 fr. per kilo.

Bismuth.—Quotations are nominally $2@$2.50 per lb., according to size of order.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 marks per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots or bars, and 2 marks for wire, etc.

Nickel.—In the absence of sales, quotations in New York continue nominal at 36@39c. per lb

In London quotations are somewhat lower at 13 @14d. per lb. In Paris quotations are 4·50@5 fr. per kilo. (equivalent to 39@45c. per lb.) for pure metal; 2·50@3 fr. per kilo. for copper-nickel alloy, 50% nickel. These quotations may be considered nominal, however, and would certainly be shaded for orders of any considerable amount.

Platinum.—Quotations abroad are firm at rates equivalent to $10@$10.50 per ounce.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 41c., 43c. and 45c. per gram. Wire and foil are 40c., 41c. and 42c. per gram. The current retail price for crucibles is 50c. per gram.

Phosphorus.—Quotations current are 50@52½c. per lb., New York or Philadelphia.

Quicksilver.—No change is reported this week and New York quotations continue steady at $41 per flask. San Francisco prices are $40@$40.50 per flask. London quotations are also unchanged at £7 10s. with £7 8s. named from second hands.

Exports of quicksilver for the month of April are reported by the Treasury Department at 183,882 lbs. This shows a large increase as compared with April, 1894, when the exports were 57,413 lbs.

Sodium.—In England the makers price is equal to 90@96c. per lb., according to quantity. Occasional sales only are reported here, usually on private terms.

Tungsten.—The following quotations for this metal and its compounds are furnished us by the manufacturers: Tungsten metal (powder) 98% pure, 70c. per lb.; tungstic acid, 45c. per lb.; tungsten salt (tungstate of soda), 30c. per lb. These quotations are for large lots. For ferro-tungsten the quotations for ton lots of the various grades are as follows: 60% metal, 60c. per lb.; 50% alloy, 45c. per lb.; 37% alloy, 33c. per lb.

Imports and Exports of Metals.—Imports of metals into this port for the week ending June 6th are reported by the New York Metal Exchange as follows: 206 tons tin and 106 cases (15 tons) antimony from Singapore; 500 tons tin and 150 casks antimony from London; 100 tons Straits tin and 22 tons Banca tin from Holland; 11,657 boxes tin plates from Swansea and Bristol; 3,530 boxes tin plates from Liverpool.

Exports of metals (other than copper) from the port of New York for the week ending June 6th are reported by the New York Metal Exchange as follows: 28 tons zinc skimmings to Bristol; 35 tons old matal and 73 tons Magnolia metal to Liverpool; 15 tons old metal, 1.868 tons old iron rails and 45 tons of sulphate of copper to Genoa; 2 tons zinc skimmings to Swansea; 13 tons nickel to Havre; 2 tons nickel to Hull; 62 tons nails, 25 tons sulphate of copper, and 8 tons copper wire to London; 12 tons tin scrap, 955 tons iron ore to Rotterdam; 16 tons sulphate of copper to Naples.

Arrivals at the port Philadelphia for the week ending June 7th were 6,700 tons iron ore from Cuba; 77 tons ferro-manganese, 3,452 boxes tin and black plates from Liverpool; 2,000 tons copper ore from Spain.

Arrivals at the port of Baltimore for the week ending June 7th were 4,666 tons iron ore and 1,181 tons manganese ore from Cuba.

Exports from the port Baltimore for the the week ending June 14th are reported by your special corre-

spondent as follows: 66 bbls., 35,500 lbs., sulphate of copper to Hamburg; 78,940 lbs. spelter to London; 22,963 lbs. zinc skimmings and dross to London; 46,880 lbs. wire to Belfast.

Exports of zinc for the month of April are reported by the Treasury Department at 441,308 lbs. against 59,008 lbs. in April, 1894.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, June 14

Heavy Chemicals.—In spite of the general improvement in business conditions throughout the country, the heavy chemical market continues quiet. Consumers are taking freely what supplies they contracted for, and there is a fair jobbing trade doing, but new business is light owing to the disinclination of buyers to pay present prices. Alkali and carbonated soda ash, though quiet, are firmer. Bleaching powder has been in light demand at unchanged prices. There has been an improved inquiry for caustic soda, and several spot sales are reported. Quotations this week are as follows: Caustic soda, 60%, 2@2·10c. for spot, other tests, futures, 1·95@2·10c. Carbonated soda ash 48%, is ·95@1c.; 58%, ·90@·95c.; according to quantity and delivery. Alkali is ·90@1c., according to test. Bicarb. is 1·80@2c. for spot. Bleaching powder is $1.82½@$1.85. Sal soda, 62½@65c.

Acids.—Manfacturers continue to report an increasing consumption of acid, though prices remain as low as ever. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$1.65 (in barrels). Muriatic, 18°, 75@85c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5.25. Mixed acids according to mixture; oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $4@$4.25.

Brimstone.—The market for Sicilian brimstone continues quiet. Quotations for best unmixed seconds are as follows: On the spot, $16 50; future shipments, and near by arrivals, $16@$16.50. Best thirds are 50c.@75c. less.

Fertilizing Chemicals.—This market is quiet and only a few small sales are reported. Most consumers are well supplied, and the demand is for small lots. Prices show little change, and we quote this week: Sulphate of ammonia, gas liquor, spot, $2.95; shipments, $2.85@2.90; bone, $2.75@$2.80. Dried blood, high grade, $1.95@$2; low grade, $1.75@$1.80 per unit. Azotine, $1.90. Concentrated phosphate (30% available phosphoric acid), 70@71½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90c. per unit. Acidulated, fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21@$22.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@$2.09; Philadelphia and Norfolk, $2.10½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80-85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively, New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.55.

Nitrate of Soda.—Quotations are $1.77½@$1.80 both for spot and for forward delivery.

Liverpool. June 5,

(Special Correspondence of Joseph P. Brunner & Co.)

This is the usual Whitsuntide holiday week and business is rather curtailed in consequence; at the same time there is a steady tone in heavy chemicals generally. Soda ash is well maintained, but not active. Spot range for tierces we quote: Leblanc ash, 48%, £3 10s. @£3 15s. per ton; 58%, £3 15s. @£4 per ton; Net cash. Ammonia ash, 48%, £3@£3 5s. per ton; 58%, £3 5s.@£3 10s. per ton, net cash. Bags, 5s. per ton less than tierces. Soda crystals are in moderate request, at £2 2s. 6d.@£2 5s. per ton, less 5% for barrels.

Caustic soda is in moderate compass and firm. We quote spot range: 60%, £6 7s. 6d.@£6 10s. per ton; 70%, £7 7s. 6d.@£7 10s per ton, net cash; 74%, £8 7s. 6d.@£8 10s. per ton; 76%, £9 5s.@£9 10s. per ton, net cash.

Bleaching powder receives a fair amount of attention from buyers, and for hardwood packages quotations range from £7@£7 10s. per ton, net cash, according to export market. Chlorate of potash is selling at from 4⅛d.@5d. per lb., and a further advance is expected. Bicarb. soda is in demand at £6 15s. per ton, less 2½% for the best quality in one cwt. kegs, with usual allowances for larger packages. Sulphate of ammonia has improved and is now quoted at from £10 7s 6d.@£10 12s. 6d. per ton, less 2½% for good gray, 24 and 25%, in double bags f. o. b. here, according to quality.

Nitrate of soda is quiet at £8 5s.@£8 7s. 6d. per ton, less 2½% for double bags f. o. b. here, as to quantity and quality. Carb. ammonia, lump, 3½d. per lb; powered, 3¾d. per lb., less 2½%.

Valparaiso, Chile. May 11.

(Special Report of Jackson Brothers).

Nitrate of Soda.—This article was very dull up to May 3d, various importers offering to resell former purchases, but on that date several buying orders from Iquique hardened the market, and this, coupled with an almost entire absence of offers to sell from that quarter, created a demand to cover various sales and to provide for some chartered vessels. This has had the effect of increasing prices to an extent which is entirely unqualified by European quotations, although these have slightly improved in view of extensive deliveries made in consuming markets during the past month. Present inquiries are for the most part for season nitrate, but producers, as a rule, refrain from offering to sell at these rates. We quote sellers of 95%, June and July delivery, at 5s. 6d.; August-October, 5s. 6d. upward; and for 96% futures 5s. 7½d. sellers. The price of 5s.,6d. with 27s. 6d. all-round freight stands in about 7s. 7d. per cwt. net cost and freight without purchasing commission, against quotations of 8s. delivered. The total sales reported for the fortnight are 759 quintals, with resales of about 200,000 quintals.

Freights are a little higher, charters having covered a number of ready vessels and some for forward loading. Owners are asking 27s. 6d. per ton for nitrate charters to United Kingdom. To United States rates quoted are 27s. 6d. to Hampton Roads and orders.

PETROLEUM.

NEW YORK, Friday Evening, June 14.

Speculation in oil certificates was light this week. Quotations on Monday were $1.40@$1.43¼, and advanced to $1.50 on Thursday. The closing price today at Oil City and Pittsburg was $1.49 bid.

The Bureau of Statistics of the Treasury Department reports total exports of mineral oils for the month of May at 58,609,126 gals., showing a decrease of 15,261,191 gals., as compared with May, 1894. For the 11 months of the fiscal year from July 1st to May 31st the exports were as follows: Crude, 99,176,205; gallons napthas, 13,615,729 gals.; illuminating, 655,016,307 gals.; lubricating and paraffin, 38,877,004 gals.; residuum, 98,742 gals.; total, 806,783,987 gals.

A cablegram from St. Petersburg dated June 13th says that the commercial treaty between Russia and Japan, which has just been signed, contains a paragraph providing that henceforth the duty upon petroleum imported into Japan shall be levied upon volume and not upon weight. This arrangement will work to the detriment of the United States, American oil being lighter than the product of Russia, though the latter is the cheaper.

MINING STOCKS.

Complete quotations will be found on pages 574 and 575 of mining stocks listed and dealt in at:

New York.	Denver, Colo.	Salt Lake, Utah.
Boston.	Aspen, Colo.	London, England.
Baltimore.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
San Francisco.	Helena, Mont.	Shanghai, China.
N. Y. Coal Stocks.	N. Y. Industrials.	Valparaiso, Chile.

NEW YORK, Friday Evening, June 14.

There is a fair inquiry for mining stocks, but it does not result in an increased volume of business. From all appearances it looks as if the public would be willing to invest in mining securities provided some sort of a guarantee were given.

The Comstocks are somewhat firmer and slightly higher, owing probably to the expectations aroused by the intention of the company to explore the Brunswick Lode. The most active stock was that of the company which will be the first to benefit by such explorations, namely, the Comstock Tunnel Company. The common stock advanced from 7 to 9c., with sales of 15,800 shares, and 3,000 of the bonds were sold at 11@12%. Of Consolidated California & Virginia 500 shares changed hands at $2 25 @$2.50. Mexican advanced from 35 to 60c., though only 300 shares were sold at these prices. Yellow Jacket was traded in to the extent of 500 shares at 42@45c. There was a sale of 1,000 shares of Hale & Norcross at 80c. Other sales were: 200 shares of Ophir at $1.25@$1.35, and 100 shares of Sierra Nevada at 43c.

The only California stock to show any sales this week was Brunswick Consolidated, of which 1,200 shares were traded in at 13@15c.

Of the Colorado shares the most active was Leadville Consolidated, which was stationary at 14c., and shows sales of 800 shares. There was a transaction of Chrysolite of 100 shares at 20c., and one of 400 shares of American Flag at 3c.

Boston. June 13.

(From our Special Correspondent.)

The trading in copper stocks the past week has been on a moderate scale, and prices have gradually improved on the strength of ingot copper prices, while the feeling is still one of confidence in higher prices a little later on. There has, of course, been a desire on the part of early buyers to realize profits, and this has had a tendency to keep prices down, but we are inclined to believe that the reaction has about spent itself, and that the future is to be one of rising values.

The Montana stocks keep the lead in point of activity, with Boston & Montana showing an advance from $51 to $54¼, with a reaction to $53¾ in the later dealings. Butte & Boston advanced $1 to $16, losing $1⅛ later.

Calumet & Hecla declined from $297 to $292 on small sales. Tamarack shows a decided improvement this week advancing from $128 to $140. The rights declined to $3, but subsequently advanced to $4 on a brisk demand, and closed at $3¾. Quincy advanced $2, with sales at $119½, and the scrip sold at $62@$64. Atlantic advanced to $17½ on the improved outlook of the mine, and held the advance. Franklin, on small sales, advanced from $15½ to $17, and closed at $16½. Kearsarge, in the early part of the week was heavy at $13½, but rallied on good buying orders to $14¾, and closed there.

Osceola declined from $29 to $27½, subsequently recovered to $29 and closed at $28½. Tamarack, Jr., was very steady with all the sales at $19½. Wolverine touched $6¾, but the bulk of the trading was at $6½. Arnold declined to $2, with a later rally to $2¾ and closed at $2¾. We note sales of Allouez at $1, Centennial at $1, National at $1½, and Bonanza at 30c.

Napa quicksilver sold at $6¼ and Santa Ysabel at $8½.

3 P. M.—The market closed to-day with a little lower tendency in the leading stocks. Boston and Montana was $53½ bid. Calumet and Hecla, $290 bid, and $298 asked. Tamarack, $130 bid, $140 asked.

Colorado Springs.

The annual meeting of the Colorado Springs Mining Stock Exchange was held June 8th. The principal business before the meeting was the choice of three members to fill vacancies on the governing committee; four names were put in nomination, and the result of the balloting was the choice of Messrs. J. B. Dickens, W. A. Otis and George L. Lindley. The report of Mr. D. V. Donaldson, secretary and treasurer of the Exchange, showed receipts from membership, listing fees, etc., amounting to $9,440, and expenses amounting to $5,889, leaving the exchange balance $3,551. Mr. Donaldson showed by statistics that the Exchange was doing a larger business in gold and silver mining stocks at the present time than other similar organization in the United States. It has been in operation 12 months, but owing to the strike at Cripple Creek and other causes, practically business has been transacted only nine months. In this time the number of shares which have changed hands has been somewhat over 10,600,000, showing an average of nearly 1,200,000 a month. A very considerable proportion of the trading has been in the higher-priced shares, ranging from 50c. to $2.50 and upward in selling price.

This report certainly shows an excellent state of affairs for the young Stock Exchange; that it should be able in so short a period of existence to show a record of business so far in excess of that done in other cities where mining stocks are dealt in, is remarkable. Part of this is due to the location of the Exchange in the center of an active mining region, part to the number of companies whose stocks are listed there and much also to the energy and enterprise of the members of the Exchange and their determination to make a good record. It must not be forgotten that very great credit is due to President R. J. Bolles, Secretary D. V. Donaldson and other members of the governing board, who have worked faithfully and energetically to promote the best interests of the Exchange. That their work has been well directed the results presented in the yearly report show. Especial attention should be called to the admirable work of the secretary, upon whom so much depends in all organizations of this kind.

A second Exchange was recently formed at Colorado Springs under the title of the "Colorado Springs Board of Trade Mining Exchange." The new board has been opened for business, the officers being William H. Gowdy, president; A. L. Tomblin, J. A. Sill, vice-presidents; J. R. McKinnie, treasurer; H. H. Dorsey, secretary; Henry R. Wray, assistant secretary and caller. There is also a board of nine directors. It is understood that perfect harmony exists between the new and the old exchanges, and that many members belong to both associations. The new association is limited to 100 members and the list is already filled. Applications are received daily, but cannot be accepted unless the by-laws are amended and provision made for greater membership. Mr. H. H. Dorsey, secretary, desires it to be known that he will cheerfully furnish any information concerning the new association or any of the stocks dealt in.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the closing quotations for the week ending June 13th as follows:

Name of Company.	7	8	10	11	12	13
Anaconda	.40	.40	.39⅜	.39⅜	.39⅛	.39⅛
Argentum-Juniata	.97⅛	.98	1.03	1.01	1.00	1.00
Isabella	.17	.17	.17	.17	.16⅞	.17¼
Moline Gibson	.99	.99½	.96	.97	.97	.95
Portland	.68	.68	.66¾	.67	.67	.67⅛
Union	.14¼	.14¼	.14⅜	.14⅜	.14⅜	14

Salt Lake City, Utah. June 8.

(Special report of James A. Pollock.)

The mining share market this week was dull and steady. There was no obvious sagging tendency, but a general disinclination to trade. Certainly something has taken considerable timber out of the market, but it cannot be wholly attributed to the

warm weather. I look for a general reaction next week.

Alliance seems to be resting upon the results of the developments now being carried on in the property. If the shaft now being sunk cuts the extension of the Silver King vein, the shares will go to $10. Anchor was rather freely offered and shows a decline of 25c., being $3 bid and $3.25 asked. The mine continues to make heavy shipments. Bullion-Beck has advanced to $6.75 bid, and no offerings under $10 with the demand excellent. The property is said to be looking better than ever before in its history. Centennial Eureka advanced to $46 bid and $52 asked. The regular monthly dividend of $1 per share will be paid on June 15th. Comstock is climbing up. It is difficult to decide whether it is due to public estimation or private manipulation. The shares at 50c. bid and 75 asked are two high for the showing made. Daly is off a bit to $6.25 bid and $7 asked. The shares ought to range higher. Daly West was heavy and transfers limited. The mine is being ably managed and making a splendid showing, developing into a property that will make a producer only equaled by the capacity of the mill built to handle the product. The management has plans for the erection of a complete milling plant, and I have reliable information that it will be built during the present summer. The mine is shipping about 25 tons of smelting ore a day, and of the 1,000 tons shipped last month the ore averaged 52 oz. silver and 27% lead. Shares closed at $6.25 bid and $6.75 asked. Mercur developed an unexpected weakness, being offered at $3.90 in large and small blocks, and bids of $3.65 were the best on open market. There is an undertone of uncertainty relative to the results of the cyanide suit and holders are not especially confident of the future. I regard the recession in price as only temporary, and the cyanide suit need not cause any particular fear as to ultimate results. Dividend No. 10 of 12½c. a share will be paid June 10th.

Mammoth was quiet. The mine is said to be shipping 4-oz. gold ore at present. Morgan has put on an extra force of men and a good grade of smelting ore is being extracted. The shares of this company are very low. Ontario shares are utterly devoid of snap or action. The annual report is out and leaves small room for encouragement, although the showing is better than was expected. Silver King failed to show any buoyancy during the week. There was but little interest displayed and, considering all things, the shares are selling in excess of real value. In the purchase of silver stocks it is well to remember that the market quotation of silver hangs around 67c. and the margin of profit is narrow.

San Francisco. June 8.

(From Our Special Correspondent.)

The market opened quietly and continued very dull all through the week. In January we had a promise of some activity; how little it has been kept the record of sales at the Stock and Exchange Board shows. The sales for the first five months of the year compare as follows:

	1894.	1895.
January, shares	240,410	254,315
February	224,750	196,700
March	264,890	286,530
April	463,805	262,810
May	781,205	274,030
Total	1,978,060	1,274,385

Closing quotations to-day are about as follows: Consolidated California & Virginia, $2.20@$2.25, Ophir, $1.25; Hale & Norcross, 86c.; Confidence, 85c.; Sierra Nevada, 45@47c.; Mexican, 30@32c.

Sales were reported of Caledonia during the week, and a quotation given of 5@7c.

The Bodies were almost neglected, the only sales reported being of Bodie Consolidated, which closes at 32@33c.

The Cinabar King Mining Company, of Sonoma County, have levied an assessment of 1% per share, delinquent August 24th.

The Gray Eagle Mining Company has levied an assessment of 5 c. per share.

The California Debris Commission has received applications to resume hydraulic mining from J. B. Rathburn, at the Last Camp mine, near Blue Canyon, Placer County, and from A. J. Mason, of the McFadden mine, near Mokelumne Hill, in Calaveras County.

Active work has been commenced upon the property of the Nevada County Electric Company, on the Yuba River.

The following mining companies report having had balances on hand May 31st, 1895, as per sworn statements filed in their offices to-day: Alta, $317; Andes, $11,214; Alpha Consolidated, $2,482; Best & Belcher, $3,446; Belcher, $8,887; Bodie Consolidated, $12,618; Bullion, $4,850; Bulwer Consolidated, $2,-197; Caledonia, $2,836; Challenge Consolidated, $828; Consolidated Imperial, $427; Confidence, $558; Crown Point, $15,704; Church, $5,622, Consolidated California & Virginia, $52,800 in coin, and unsold bullion valued at $18 395; Consolidated New York, $1,478; Chollar, $7,130; Exchequer, $2,037; Gould & Curry, $6,502; Gray Eagle, $1,164; Hale & Norcross, $5,245; Justice, $224; Kentuck Consolidated, $2,304; Lady Washington, $1,560; Mexican, $2,123; Mono, $2,501; Ophir, $12,581; Occidental, $1,290; Overman, $10,767; Potosi, $11,171; Savage, $11,017; Seg. Belcher, $4,324; Sierra Nevada, $11,-189; Silver Hill, $2,078; Standard Consolidated, $35,884; Union Consolidated, $6,112; Utah Consolidated, $742.

The following mining companies report having had an indebtedness May 31st, 1895: Belle Isle, $3,012; North Belle Isle, $868; Navajo, $1;110; North Commonwealth, $4,440; Silver King, $3,108; Summit, $635.

The annual meeting of the Bodie Consolidated has been called for June 17th.

BY TELEGRAPH.

San Francisco, Cal., June 14.—The opening quotations to-day were as follows: Best & Belcher, 28c.; Bodie Consolidated, 32c.; Bulwer, 5c.; Chollar, 20c.; Consolidated California & Virginia, $2.30; Eureka Consolidated, 20c.; Gould & Curry, 27c.; Hale & Norcross, 90c.; Mexican, 54c.; Mono, 5c.; Ophir, $1.25; Savage, 34c.; Sierra Nevada, 49c.; Union Consolidated, 28c.; Yellow Jacket, 41c.

Paris. June 2.

(From Our Special Correspondent.)

Our stock market grows week by week more active. While the gross amount of the dealings does not increase so largely, the activity is no longer concentrated on one point. Two months ago one heard of nothing but South Africa; the buying was almost entirely of the gold shares of that wonderful region, but now, while the Transvaal still holds the first place, other stocks find frequent quotations and sales are daily recorded of shares which, in March and April, were never mentioned.

The quiet section of the market continues to be in the metallurgical shares. While most of those quoted are of companies well established and with large means, there is a prevailing doubt as to future values, and an opinion that profits will be very small for some years to come. Competition is most sharp, and the Belgian and German works are so determined to hold and increase their foreign trade that our works must either depend on home contracts entirely or take orders at figures which leave no profit. The important companies, such as those at Creusot, Firminy, Fives-Lille, the great forges of the Rive-de-Gier, and others, have work to do, but still complain of the prices and the narrow prospects of gain in the future.

This reacts on the iron and coal stocks. The former have little movement, and the latter are unsteady, and rather inclined to be weak. At present prices it seems as if many of these shares would be good investments; but all the world, as you know, wants to buy when prices are going up, and so even the best coal stocks are not in strong demand.

The shares of the metal mining companies generally are active, and there has been a notable upward reaction. The demand for Malfidano, Vieille Montagne and Pontgibaud increases. Laurium is also gaining, and the Spanish lead companies are dealt in with steadily rising quotations. A new zinc company, the Zaghouan, which has a concession to work mines in Tunis, has put on the market its 5% obligations, which are selling well. The property is said to be valuable, though development has only just been begun. Nickel is still going down, and the fact seems to be that the company has but little future, since it cannot compete with your American mines at current prices. Unless an unexpected demand for the metal should spring up, the shares must continue to fall.

The movement in the copper shares is strongly marked. Rio Tintos have been largely sold, and the price is well maintained on heavy orders from Berlin. Tharsis and Cape Copper are well maintained and in demand on rising quotations. Boleo continues to hold its heavy advance, which seems indeed to be fully warranted by the improved condition of the company.

The speculation in nitrate shares shows signs of breaking down. It has been from the first an inside operation, and prices were forced up by all the devices known to the market, in spite of unfavorable trade conditions. The general public has always been suspicious of these shares, and the very lively English speculator who controlled the operation has not succeeded in unloading much stock here.

Huauchaca continues to rise on strength of the better prospects for silver. The metal really holds its late rise in price remarkably well.

The Transvaal gold stocks are still fluctuating considerably, but on the whole are stronger than last week. The buying is more of a speculative kind and less for investment than it has been for some time past.

An interpellation has been brought forward in the Chamber of Deputies as to the concessions under which English companies are working the great phosphate beds of Tebessa, in Tunis. It is said that there is some irregularity about the grants; moreover, there is some feeling that these valuable properties should have been conceded to our grasping insular rivals and not to a French company. It may be said that this interpellation savors of international narrowness; but what will you have? We maintain a costly protectorate in Tunis, and certainly should not give away its commercial advantages to foreigners.

At the meeting of the Societe des Mine set Fonderies de Zinc de la Vieille Montagne the report showed gross earnings for 1894 amounting to 4,859,-718 fr.; after deducting the general expenses there was left a balance of 4,494,153 fr., which the surplus from 1893 increased to a total of 4,206,602 fr. Of this net return 533,208 fr. were required for the reserve exacted by law, 1,078,411 fr. were added to the sinking funds and 333,255 fr. for office expenses and similar charges. From the remainder dividends were paid amounting to 2,250,000 fr., and leaving a balance of 11,727 fr. to the current year. The strongest point of the report is the large amount devoted to the sinking fund and the reserve. The company now has a reserve fund amounting to over 6,000,000 fr.

Our friends of the dual empire have had their political crisis, following only a few weeks after the little financial flurry, but Vienna and Buda-Pest do not seem to have disturbed themselves seriously over it. The retirement of Count Kalnoky is looked at here as a success of liberalism and a check to the reactionary party, which has apparently been gaining ground for several years, but, as is now seen, only in appearance. Probably the Emperor would have liked to keep his old minister, but circumstances made it impossible.

Our German neighbors are busy over the opening of the Baltic-North Sea Canal. This does not prevent a conflict of ideas there also, and the Emperor is finding his Reichstag altogether intractable. This will perhaps be a long parliamentary struggle, but however long, the people must win in the end.

My inquiries confirm the report I sent you last week as to the much discussed Chinese loan. It will be brought out in Paris substantially as a Russian 4% issue. Russia will regulate the transmission of the money to China, and will receive in return, what? We do not know yet, but probably it will be the port she wants as a terminus for the Siberian Railroad; perhaps also the southern half of the Amour Valley. The amount of the loan will be 350,000,000 or 400,000,000 fr.—probably the larger amount.

AZOTE.

DIVIDENDS.

Dominion Coal Company.—Divident of 4%, semi-annual, on preferred stock, payable July 1st, to stockholders of record on June 15th.

MEETINGS.

Bodie Consolidated Mining Company, annual meeting, at the office in San Francisco, June 17th.

Consolidated California & Virginia Mining Company, special meeting, at the office in San Francisco, June 21st, to vote on an agreement for the purchase of additional mining property.

ASSESSMENTS.

Company.	Loc'n.	No.	Dinqt.	Sale.	Amt.
Ajax	Utah	..	June 12	July 8	$ .05
Alpha	Nev.	14	" 27	" 18	.05
Alta	"	49	" 11	" 2	.10
Andes	"	4	" 1	June 17	.15
Big Hole	Cal.	....	May 10	July 11	.01
Centen'ial Gravel	"	48	June 6	" 6	.01
Glencoe Con.	"	....	May 21	June 18	25.00
Gold Bar Con.	"	1	June 29	July 22	.02
Gold Point Con.	"	....	" 29	.....	.05
Hale & Norcross	Nev.	107	July 3	July 25	.20
Justice	"	59	June 11	June 29	.10
Merrimac	Cal.	1	" 3	" 20	.05
Mexican	Nev.	52	" 7	July 10	.25
Mt George	Cal.	5	" 29	" 22	.03
New Basil Con.	"	28	" 29	" 22	.05
Occidental Con.	Nev.	18	Apr. 23	June 29	.10
Osborn Hill	Cal.	5	July 8	July 29	.25
Phœnix	Utah	....	June 15	" 1	.25
South Eureka	Cal.	19	June 24	" 23	.01
Taylor, H. P.	"	...	May 31	" 26	.04
U. S. Grant	S. D.	6	June 20	" 20	.0 2½
Yellow Jacket	Nev.	59	May 21	June 26	.25

DIVIDENDS PAID BY MINING COMPANIES, MAY AND YEAR, 1895.

NAME OF COMPANY.	Location.	Paid in May.	Paid in since Jan. 1.
Am. Dev. & Mg. Co.	Mont.	.....	$24,340
Alaska-Mexican	Alaska	.....	25,500
Alaska-Treadwell	"	.....	150,000
Bald Butte	Mont.	.....	12,500
Bangkok-Cora Bell	Colo.	$6,000	30,000
Belden, F. E. Mica	N. H.	4,000	22,000
Boston & Mont. (Copper)	Mont.	30,000	30,000
Bullion-Beck & Champion	Utah.	25,000	150,000
Calumet & Hecla	Mich.	500,000	500,000
Centennial-Eureka	Utah.	30,000	150,000
Champion	Cal.	3,400	17,000
Con. Cal & Va.	Nev.	.....	162,000
Copper Queen Con.	Ariz.	50,000	10 ,000
Coptis	Nev	.....	1,000
De Lamar	Idaho.	.....	244,000
Elkhorn	Mont.	25,000	25,000
Elkton	Colo.	.....	7,500
Forepaugh	"	.....	16,000
Gold & Globe	"	.....	11.250
Golden Fleece	"	6,000	30,000
Hecla Con.	Mont.	15,000	75,000
Homestake	So. Dak.	31,250	156,250
Hope of St. Louis	Mont.	.....	10,000
Horn Silver	Utah	.....	100.000
Iron Mountain	Mont.	10,000	60,000
Jackson	Cal.	.....	2,000
Kennedy	"	48,000	140,000
Mayflower Gravel	"	6,000	30,000
Mercur	Utah	25,000	75,000
Mollie Gibson	Colo.	.....	50,000
Montana, Ltd.	Mont.	.....	82,500
Mont. Ore Purchasing Co.	"	40,000	80,000
Morning Star Drift	Cal.	16,800	84,000
Mt. Rosa	Colo.	.....	5,000
Napa Con. (Quicksilver)	Cal.	20,000	50,000
Nugget	Colo.	.....	5,000
Osceola Con.	Mich.	.....	50,000
Portland	Colo.	3,000	70,290
Quincy	Mich.	200,000	400,000
Silver King	Utah.	37,500	37,500
Smuggler	Colo	50,000	250,000
Standard	Cal.	10,000	20,000
Union	Colo.	1,250	1,250
Victor	"	20 000	100,000
W. Y. O. D.	Cal.	3,000	15,000
Total		$1,255,800	$3,626,880

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table

STOCK QUOTATIONS.

NEW YORK MINING STOCKS.*

NAME OF COMPANY.	Location.	Par val.	June 8. H.	June 8. L.	June 10. H.	June 10. L.	June 11. H.	June 11. L.	June 12. H.	June 12. L.	June 13 H.	June 13 L.	June 14. H.	June 14. L.	Sales
Alice	Mont.	25											.03		400
American Flag	Colo.	1													
Argentum-Jun	"	2													
Belcher	Nev.	100													
Best & Belcher	Colo.	100													
Bodie Con	Cal.	100													
Brunswick	"	100	.14		.13				.15						1,200
Castle Creek	Idaho	1													
Chollar	Nev.	100													
Chrysolite	Colo.	50			.20										200
Comstock scrip	Nev.	100													
do. T. bonds	"	100									.11		.12		3,000
do T. stock	"	100	.07				.07		.08		.08	.07	.09	.08	15,800
Con. Cal. & Va.	"	100			2.35		2.25				2.50		2.45		500
Con. Imperial	"	50													
Crown Point	"	100													
El Cristo	U. S. C	2													
Enterprise	Colo.	5													
Father de Smet	Dak.	100													
Gould & Curry	Nev.	100													
Hale & Norcross	"	100			.80										1,000
Holyoke	Idaho	1													
Homestake	S. Dak.	100													
Horn Silver	Utah.	25													
Iron Silver	Colo.	100													
Isabella	"														
K. & Pembroke															
Lacrosse	Colo.	10													
Leadville Con	"	10			.14		.14		.14						800
Little Chief	"	50													
Mexican	Nev.	50			.35		.37						.60		500
Mollie Gibson	Colo.	5													
Mono	Cal.	100													
Ophir	Nev.	100					1.25						1.35		200
Phoenix of Ariz	Ariz.	100													
Plymouth	Cal.	100													
Portland	Colo.	1													
Potosi	Nev.	100													
Quicksilver	Cal.	100													
do. pref	"	100													
Robinson Con	Colo.	50													
Savage	Nev.	100													
Sierra Nevada	"	100	.45												100
Standard Con	Cal	100													
Union Con	Nev.	100													
Victor	Colo.	5													
Yellow Jacket	Nev.	100					.45				.42		.44		500

* Official quotations N. Y. Stock and Con. Stock and Petroleum Exchanges.
Total shares sold, 24,000.

BOSTON MINING STOCKS.*

NAME OF COMPANY.	Location.	Par val.	June 7. H.	June 7. L.	June 8. H.	June 8. L.	June 10. H.	June 10. L.	June 11. H.	June 11. L.	June 12. H.	June 12. L.	June 13. H.	June 13. L.	Sales.
Allouez	Mich.	25					1.00						.75		110
Arnold	"	25	2.00		2.50	2.00			2.63	2.50	2.88	2.63			575
Atlantic	"	25	15.50		17.00	15.75	17.50	17.00	17.13						1,005
Bonanza	"	10							.30						200
Bost & Mont	Mont.	25	51.50	51.00	52.25	51.38	53.50	52.00	54.00	53.00	54.25	53.75	54 00	53 50	7,505
Butte & Bost	"	25	15.00		15.38	15.00	15.63	15 50	16 00	15.75	16.00	15.88	16.00	15.50	3,345
Cal. & Hecla	Mich.	25					295		295		292				5
Centennial	Mich.	25					1.00				1.00				50
Dominion Coal	N. S.	100	16.50	16.00	16.25	16.00	16.50	16.25	16.38		16.50		16.75	16.50	2,400
do. pref	"	100	97.50	96.00					96.88	96.00	96.50	95.75	96.50		315
Franklin	Mich.	25							17.00	16.50	17.00	16.50			75
Humboldt	"	25													
Kearsarge	"	25	13.50				14.00		14.50	14 00					1,485
Lake S'perior I.	"	25													
Mesnard	"	25													
Napa Con. Q	Cal.	7							6.25						100
National	Mich.	25			1.50		1.50								370
Osceola	"	25	27.50		27.50				29.00	28.50	29.00		28.5	27.50	432
Quincy	"	25							115		119½		119¼		30
do. scrip	"		62 00				64.00				64.00				165
Santa Ysabel	Cal.												8.50		1,000
Tamarack	Mich.	25	130				134		136	135	140	135½	140	128	234
do. Mg. Rights	"		4.25	3.75	4.00	3.75	4.00	3.00	3.88	3.25	4.00	3.50	4.00	3.50	10,155
Tamarack, Jr.	"	25							19.50		19.50		19.75	19.50	325
Wolverine	"	25			6.50		7.00	6.50	6.50		6.50		6.50	6.38	1,553

* Official quotations Boston Stock Exchange. Total shares sold, 31,688.

COLORADO SPRINGS MINING STOCKS.*

NAME OF COMPANY.†	Par val	June 3. H.	June 3. L.	June 4. H.	June 4. L.	June 5. H.	June 5. L.	June 6. H.	June 6. L.	June7. H.	June7. L.	June 8. H.	June 8. L.	Sales.
Alamo	$1					.13		.03	.02¾					8,300
Anaconda	5	.39				.38		.38		.39½				23,000
ArgentumJ	2	.99½		1.00½	.99½	.98		.98		.98				3,850
Bob Lee	1					.006	.0055	.006		.006	.0055	.0055		62,000
CrippleC C	1	.06⅝	.06¼	.06¼	.06	.06¼	.06	.06		.06	.05¾	.05¾	.05¾	41,500
C. O. D.	1													
Cr. & C. C.	1	.01⅞	.01¾	.02	.01⅞	.02¾		.02	.01¾	.02		.02¼		67,500
Fanny R.	1	.06		.06	.05¾	05	.05¾			.05¾	.05½			7,000
Franklin	1							.0055				.007		2,000
Gold & Gl.	1			.07½								.07¼		4,000
Isabella	1			17		.17		.17	.16¼	.17				24,000
Mollie G.	5							.97		.98	.97			1,400
Mt. Rosa	1	.05¾	.05¼	.06¼	.05¾	.05¼		.05½	.05¾			.05¾	.05¾	7,100
Pharmacist	1	.05¾	.05¾					.05¼						14,014
Portland	1	.64		.68½	.68	.68½	.68	.68	.67¼	.69¼	.68	.68		6,700
Specimen	1	.03¼		.03¾		.03¾		.03¾						14,000
Summit	1													
Union	1	.14½	.14¼	.14¼	.14	.14¼	.14	.14¾		.14¼	.14¼			13,100
Work	1	.02¾	.02¾			.03		.02¾						36,000

* Official quotations Colorado Springs Mining Stock Association. Total shares sold, 336,064.
† All the companies are located in Colorado.

ASPEN MINING STOCKS.* Week ending May 31

NAME OF COMPANY.	Location.		Par value.	Bid.	Asked.	Shares sold.	Price.
Aita Argent	Aspen,	Colo.	$1.00	$0.10	$0.10¾	3,000	$0.10
Argentum-Juniata	"	"	2 00	1.00	1.02¾	4,500	1.02
Aspen Contact	"	"	5.00	.25	.25	100	.25
Aspen Deep Mining	"	"	1.00	.08	.09	23,000	.09
Best Friend	"	"	1.00	.04	.04¼	1,000	.04
Bi-Metallic	"	"	1.00	.02	.03	2,000	.03
Bushwhacker	"	"	1.00	.06½	.07	7,800	.07
Caverhill Consolidated	"	"	1.00	.20	.20	14,000	.20
Della S	"	"	5.00	.70	.72½	11,000	.72
Gold Valley Placer	Routt Co.,		1.00			30,000	
Mineral Farm Consolidated	Aspen,		1.00	.09	10	5,000	.09
Mollie Gibson	"		5.00	1.02½	1.04	3,500	1.04
Old Colony Gold	Taylor River,		1.00	.75	.75	4,000	.75
Sheep Mt. T. & M	Crystal,		1.00		.25		
Smuggler	Aspen,		1.00	1.50	1.75	1,800	1.75

* Special report of Arkell, MacMillan & Stewart. Total shares sold,

COAL AND COAL RAILROAD STOCKS.*

NAME OF COMPANY.	Par value.	June 8. H.	June 8. L.	June 10. H.	June 10. L.	June 11. H.	June 11. L.	June 12. H.	June 12. L.	June 13. H	June 13. L.	June 14. H.	June 14. L.	Sale
Am. Coal	25													
Balt. & Ohio	100			63¾	63	63		63¾	63					1,015
Buff., R. & P.	100													
do. pref	100													
Ches. & Ohio	100	23⅝	23¼	22¾	22½	23¾	22¾	22¾	22½	23¾	23⅜	23¾	22½	9,320
Col.C. & I.Dev	100			8¾				9						325
Col. Fuel & I.	100	28½		28¾	28½	29¾	28¾	29¾	28¾					4,900
do. pref.	100													
Col.,H.V.&Tol	100	26¾	25¾	26¾	26½	26¾	26¾	26⅞	26½	27	26½	26¾		3,320
do. pref.	100													
Col. & H.Coal	100	9	8	9¾	9¼	9	8¾	8¾		9¼	8¾			2,203
do. pref	100													
Con. Coal	100													
Del. & Hud.C	100	129		128¾	128½	129½	129	129¼	129	129¾	129¼	130	129¾	2,809
Del., L. & W.	50	161½		161¾	161½	161	159¾			162¼	161¾	162½		4,656
Lake Erie&W	100	23¾		24¼	23¾	25	24	24¼	24	24½	24	24¼	24¼	9,805
do. pref.	100			83¼	82	83¾	83	84¼	82¼					830
Maryl'dC.pref	100													
Morris & Es'x	100			163										30
N. J. Central	100	99¾	98¼	99	98¼	99¾	98¼	99¾	98¾	101¾	99¼	101	100¼	15,285
N. Y., L. & W.	100	113½												3
N. Y., L.E.&W	100	11	10¾	11¾	11¾	11¾	10¾	11¾	11	11¾	11	10¾		4,400
do. pref.	100					24								100
N.Y.,Susq.&W	100	8¾	8	8¾	7¾	8¾	8¼	10¼	8¼	10¾	9¾	11¾	10¾	12,850
do. pref.	100	24¾	23¾	24¾	21	24¾	23¼	27¼	24¾	28¾	26¾	31¾	28¼	43,249
Norfolk & W.	50	34¾				35¾	34¾	35¾	34¾	34¾	34¾			3,530
do. pref	50									14½				150
Penn. Coal	50													
Phila. & Read.	50	16¾		17	15¾	17¼	16	17¾	16¼	18¼	16¾	18¼	17¾	102710
Tenn. C. & I.	100	31	29¾	32¼	31¼	33¾	32½	33¾	32¾	33	31¾	32¾	21¾	67,828
do. pref	100			90		90		90¼	90	91½				140
Wheel. & L. E	100	14¼	13¾	14¾	14	14¾	14	14¾	14¼	14¾	14¼	14¾	14¾	11,240
do. pref	100			45¾				45½		45¼		46¼	45¾	910

* Official quotations N. Y. Stock Exchange. Total shares sold, 301,938.

INDUSTRIAL AND TRUST STOCKS.*

NAME OF COMPANY.	Par value.	June 8. H.	June 8. L.	June 10. H.	June 10. L.	June 11. H.	June 11. L.	June 12. H.	June 12. L.	June 13. H.	June 13. L.	June 14. H.	June 14. L.	Sales
Adams' Exp	100									147¾				10
Am. Cot.Oil	100					27¾		28¾		27¾				550
do. pref	100	74				73½		74		74	73¾			900
Am. Express	100					115								15
Am. Sug. Rf.	100	118¾	117¾	118	117⅜	118¾	117¾	119¼	118¾	121¾	119¼	118⅜	117	181619
do. pref.	100	103½		101¼	101	102	101¾	102¼	102¼	102⅝	102¼	100¾	100¼	4,167
Edison E. Ill	100							100		100¾	100⅝	101¼	101	860
General Elec	100	36¾	35¼	37	36¼	37¼	36¾	36¾	35¾	36¾	35¾	35¾	24¼	21,900
Nat. Lead	100	36	35¾	36¼	35⅝	36¼	35¾	36¼	35¾	36¼	35¾	36¼	35¾	8,600
do. pref	100			89¼		90	89¼	89¼		90¾	89¼	90¾	90	2,458
Nat.Lins.Oil	100			29¾	28¾	29¼		29¼	29	28		29		2,024
U.S.Cordage	100	1⅝	1¼	2	1⅝	2	1¾	2¼	1¾	2¼	1⅞			7,309
do. pref	100	3½	2¾	3½	3	3¾	3¼	3½	3	3⅝	3½	3¾		4,101
do. gtd.	100	7	6	7	6	7½	7¼	7		7¼	7			3,376
U.S. Express	100	41¾	41¼											145
U. S. Rubber	100	42	41	42¾	41¾	42	41¼	42	41	41¾	40¾	41¾	41¾	8,532
do. pref	100	97¼		97¾		97¼	97	97¼		97¾				783
Wells Fargo	100	110	108			110								129
West. Union	100	93⅝	92¼	93¼	92⅝	93¼	93	93¼	93¼	93¾	93¼	94¼	93⅛	26,280

* Official quotations N. Y. Stock Exchange. Total shares sold, 276,773.

MONTANA STOCKS.* HELENA, May 18.

NAME OF COMPANY.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price	Date.
Am.Dev.&M.Co.	Silv.Bow Co, Mont.	Butte, Mont.	$1	$2.25	$2.75			
Bald Butte	L.& Cl'ke Co., "	Helena "	1	3.50	4.00			
Benton Group	Meagher Co. "	W.Sph. S.Mont.	5	.20	.30			
Bi-Metallic	Granite Co. "	St. Louis, Mo.	25	4.00	5.00			
Combination	" " "	" " "	10	.65	.25			
Elkhorn	Jefferson Co. "	London, Eng.	£1	108.	118.			
Granite Mt.	Granite Co., "	St. Louis, Mo.	$25	1.75	2.25			
Hope of St. L.	" " "	" " "	10	2.50	3 00			
Hope	Jefferson Co., "	Helena, Mont.	5	3.50	5.00			
Hel'a & Frisco	Shoshone Co., Id.	" "	5	2.00	3.00			
Iron Mountain	Missoula Co.,Mont.	" "	10	.60	.65	3,000	.60	May 7
Ontario	DeerLodgeCo. "	" "	1	.95	1.00	300	.95	" 17
Poorman (Cœur d'Alene)	Shoshone Co., Id.	Butte "	10	.40	.45			
Royal Gold	D'r LodgeCo.,Mont	D'r Lodge, "	5	.70	.85			

* Special Report of Samuel K. Davis. Total shares sold,

Duluth Stocks.* May 25.

Name of Company.	Par value	Price	Bid.	Asked
Adams Iron	$10		$3.00	$3.50
Biwabik I. M.	100	$19.50	20.00	21.00
Chandler Iron	25			27.00
Clev.Cliffs Iron.	100		25.00	32.00
Great No. M.	100		1.75	2.00
Great West. M.	100		1.00	1.50
Jackson Iron	25			60.00
L. Sup. Con. M.	100	11.50	12.00	12.50
L. Sup.(Marq'te)	25		17.00	20.00
Mes. C., L. & E.	10	5.00		4.00
Met. L. & Iron	25			60.00
Minnesota Iron.	100	40.00	45.00	55.00
Mes. Chief Iron.	100		2.00	2.25
Mis. Mt. Iron.	100	16.50	16.00	17 00
Mountain Iron	100	42.00	45.00	50.00
Ohio Mining	100	4.00	4.00	5.00
Pioneer Iron	25		.25	1.00
Pitts. & L. A	100		55.00	62.00
Sec'ty L. & E.	10		16.00	18.00

* Official quotations Duluth Exchange.

Pittsburg Stocks.* June 13.

Name of Company.	Par value	Last sale.	Bid.	Ask.
COAL STOCKS:				
N.Y. & Cl. G. C.	$50		$31	$37½
GAS STOCKS:				
Allegheny	100	$47½	47½	48
Chartiers Valley	100	8¼	8	10
Ohio Valley	50			35
People's Nat. Gas	50		30	35
People's Nat. Gas and Pipeage	25	14¾	14	14¾
Pennsylvania	50	7½	5½	9
Philadelphia	50	18	18	18⅛
Wheeling	50		16	
MINING STOCKS:				
Lustre	10	12¼	12	12¼
OIL STOCKS:				
Tuna	50			20

*Official quotations Pittsburg Exchange.

San Francisco Stocks.*

NAME OF COMPANY.	Location	CLOSING QUOTATIONS. Jun. 7	Jun. 8	Jun. 10.	Jun 11	Jun. 12	Jun. 13.
Alta	Nev..	.15	.15	.16	14	.15	.15
Belcher	" ..	.33	.35	.35	.34	.36	.35
Belle Isle	" ..						
B. & Belch	" ..	.41	.38	.40	39	44	.37
Bodie	Cal.	.35	.32	.25	.26	.35	.34
Bulwer	" ..			.05	05		
Challar	Nev..	17	.16	15	.17	.20	.19
Com'w'lth	" ..						
Con.C.&V.	" ..	2 30	2.30	2 20	2.30	2.30	2.25
Crown Pt.	" ..	35	.34	.35	.33	.36	.35
K'r'ka Con	" ..						
G'ld & C'y	" ..	.22	.21	.21	.24	.30	.24
Hale & N.	" ..		.86	.87	.92	.93	.90
Mexican	" ..	.32	.30	.30	.29	.33	.54
Mono	Cal.			06	.05	.05	.05
Ophir	Nev..	1.30	1.25	1.20	1 20	1 80	1 30
Potosi	" ..	.33	.33	.33	.35	.47	.40
Savage	" ..	.34	.31	.30	.32	.36	.35
Sierra Nev	" ..	.48	.47	.46	.48	.50	.49
UnionCon	" ..	.26	.25	.25	.25	.31	.30
Utah	" ..						
Yel. Jack.	" ..	.42	.39	.40	.40	.41	.40

* Par value of all shares quoted is $100.

Baltimore Stocks.* June 13.

Name of Company.	Location.	Par value.	Bid.	Ask.
Balt. & N. C.	N. C.	$5		$0.02
Con. Hill	"	5		.10
Con. Coal	Md..	100	$31.50	32.50
Con. G. & C.	N. C.	5		.04
Ga. C. Coal	Md..	100	103.00	104.00
How. C. & C.	" ..	5	1.10	1.20
Lake Chrome	" ..	5		.10
Ore Knob	N. C.	10		.50
Silver Valley	Md..	5		20.00

* Official quotations Baltimore Stock Exchange.

LONDON. Week ending May 25.

Name of Company.	Par value.	Prices. Bid.	Asked.
AMERICANS:		£ s. d.	£ s. d.
Alaska-Mexican	£1	1 5 0	1 10 0
Alaska Treadwell	5	3 10 0	3 15 0
American Belle	1	2 0	2 6
De Lamar	1	1 2 6	1 5 0
Elkhorn	1	9 0	10 0
Harquahala	1	2 0	2 6
Holcomb Valley	5s.	2 6	2 6
Jay Hawk	£1	1 9	2 3
Montana	1	12 6	14 6
New Guston	1	10 0	12 6
Palmarejo (Mex.)	1	3 9	4 3
Plumas-Eureka	2	11 3	13 9
Poormac	5s.	3 3	3 9
Richmond	£5	1 2 6	1 7 6
Sierra Buttes	2	10 6	12 6
Springdale	4s.	3 0	3 3
SOUTH AMERICANS:			
Colombian Hydraulic	£1	12 6	15 0
Frontino & Bolivia	1	1 5 0	1 7 6
Tolima, A shares	5	7 10 0	8 0 0
" B "	5	6 10 0	7 0 0
COPPER STOCKS:			
Cape Copper	2	1 17 6	2 2 6
" preferred	2	1 18 9	2 1 3
Copiapo	2	2 5 0	2 10 0

Name of Company.	Par value.	Prices. Bid.	Asked.
COPPER STOCKS:		£ s. d.	£ s. d.
Rio Tinto	£10	16 6 3	16 8 9
Tharsis	2	4 15 0	4 17 6
AUSTRALIANS:			
Bayley's Reward	1	10 0	11 0
Broken Hill Proprietary	8s.	2 4 6	2 5 6
Mt. Morgan Gold	17s. 6d.	2 10 0	2 12 6
INDIANS:			
Champion Reef	£1	4 16 3	4 18 9
Mysore	1	3 1 3	3 3 9
Nundydroog	1	1 16 3	1 18 9
Ooregum		3 0 0	3 10 0
" preferred		3 17 6	4 2 6
SOUTH AFRICANS:			
British S. Africa Co	1	3 16 3	3 18 9
City & Suburban	1	24 10 0	25 0 0
Crown Reef	1	9 17 6	10 2 6
De BeersCon (diam'nd)	5	20 18 9	21 1 3
Durban-Roodepoort	1	7 3 9	7 6 3
Ferreira	1	16 15 0	17 5 0
Geldenhuis Estate	1	6 10 0	6 12 6
Jagersfontein (diam'd)	5	10 7 6	10 10 0
Langlaagte Estate	1	5 1 3	5 3 9
New Primrose	1	6 17 6	7 0 0
Robinson	5	8 17 6	9 2 6
Simmer & Jack	1	14 15 0	15 0 0

MEXICO. Week ending June 7.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Closing.
Amistad y Concordia	Hidalgo	9,600	$4.53		$68	$66
Angustias	Guanajuato	2,400	15.00		1,080	1,100
Asturiana y Anexas	Zacatecas	2,500	10.00		370	370
Cerro Colorado	Chihuahua	15,000		$1.00	15	15
Cinco Senores	Guanajuato	2,000	30.00		1,150	1,500
Concepcion y Anexas	S. Luis Potosi	2,700			200	470
El Oro	Guanajuato	500			100	100
do. pref	"	2,000	2.00		100	100
Huautla Sta. Ana	Morelos	4,000	1.50		105	105
Luz de Berda	Michoacan	3,000		0.50	40	40
do. Free stock	"	1,000			40	40
Luz de Maravillas	Hidalgo	1,100			400	400
Purisima de los Com.	Zacatecas	240			72	70
Real del Monte	Hidalgo	2,554	20.00		1,250	1,250
Rosario y Anexas	Durango	4,800			120	120
do. pref	"	2,400			80	80
San Rafael y An	Hidalgo	1,200	30.00		1,750	1,500
do. free stock	"	1,200	30.00		1,180	1,75
Sta. Elena Almoloya	"	1,280		0.20	10	10
Sta. Gertr. y Anexas	"	28 800	1.50		77	77
do. free stock	"	9,600	1.05		30	30
Sta. Maria de la Paz	S. Luis Potosi	2,400			200	200
Tlauzingo	Puebla	2,400			40	40
Zaragoza	Hidalgo	1,100			30	30
Zomelahuacan (gold)	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	130	130

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

Philadelphia.* Week, June 12.

Company.	Par	High	Low.	Sales.
Cambria Iron	$50	$58	$55	396
Hunt & Br. Top	50	33½	.....	75
do. pref	.....	54½	54	197
Lehigh C. & N.	50	47½	46¾	79
Lehigh Valley	50	37¾	37	1,462
Penn. R. R.	50	53¼	52¾	2,122
Penn. Salt	50	96	.....	10

* Official quotations Phila. Exchange. Total sales, 4,291.

Shanghai, China.* May 3.

Name of Co.	Par.	Last div.	Price.
Jelebu Mg	$5	$0 25	T. 2 55
Punjom Mg	4		" 4 75
do. pref.	1		" 1 09
Raub A'lianG.	£1	10½d.	" 3·28
Sheridan Con.	T. 100		" 4·00

* Special Report of J. P. Bisbett & Co. Prices quoted are in silver taels

PARIS. Week ending May 31.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Closing
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27 000,000	2,000	100.00	1,975.00	1,980.00
" " Firminy	"	" "	3,000,000	500	85.00	1,547.00	1,5 0.00
" " Fives-Lille	"	" "	12,000,000	5 0	35.00	618.00	620 00
" " la Marine	"	" "	30,000,000	500	30.00	8 2.50	720 00
" " Longwy	"	" "		500	35.00	670.00	670.00
" " l'Horme	"	" "		500		18.0	15.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	410.0	350.00
Anzin	France	Coal		200.00		4,090.00	4,1 0.0
Boleo	Lower Cal	Copper		500		1,12 0.00	1,125 00
Bruay	France	Coal	3,0 0,000	400	600.00	14,50 0.00	14,500.00
Callao	Venezuela	Gold	3:,200,000	125		12.5 0	12.25
Cape Copper	S. Africa	Copper		50	1.50	52.50	52.50
Champ d'Or	"	Gold		25		107.50	10 .75
Courrieres	France	Coal	6 0,000	300	150.00	4,2 0.00	4,200.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	5 7.50	5 6.00
Dombrowa	Russia	Coal		500		585.00	575.00
Dourges	France			1,000	225.00	5,855.00	5,850.00
Dynamite Centrale	"	Explosives		500	25.00	625.00	625.00
Dynamite Francaise	"	"		500	25.00	70 .00	695.00
Epinac	"	Coal		2,500		600.00	600.00
Huanchaca	Bolivia	Silver		125	5.00	185.00	188.12
Jerez-Lanteira	Spain	Copper				6.50	6.75
Kebao	Tonquin	Coal		500		589.00	590.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	595.00	595.00
Malfidano	Italy	Zinc	12,500,000	500	52.50	885.00	970.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,300	500	37.50	280.00	280.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	780.00	785.00
Nickel	N. Caledonia	Nickel	12,720,000	500	30.00	235.00	236.0
Penarroya	Spain	Coal, etc.		500	52.50	830.00	835.0
Pontgibaud	France	Lead, etc.				257.50	2 0.00
Rio Tinto	Spain	Copper	81,250,000	250	8.00	350.00	399.00
Robinson	S. Africa	Gold		125	12.5	22 .00	225.00
Saint Elie	Fr. Guiana	"	4,500,000	25		35.00	37.50
Salines de l'Est	France	Salt		500	27.00	280.00	280.00
Soufres Roumaines	Italy	Sulphur				20 .75	202.0
Tharsis	Spain	Copper		50	6.2	122. 0	118 75
Vicogne-Noeux	France	Coal				700.00	17,0 0.00	17,250.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	456 25	462.50

VALPARAISO, CHILE.* Week ending May 1.

Name of Company.	Capital.	Share value. N'minal.	Paid up.	Last dividend.	Prices. Bid.	Asked.	Last sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent	$39½	39½	$39⅝
Caracoles	315,000	100	100	5 "	.....	50	.....
Descub. de Huantajaya	1,000,000	100	100	2 "	40	45	42
Oruro	800,000	1,000	1,000	.....	2,9 0	3,0 0	2,980
S. Agustin de Huantajaya	1,50 ,000	100	100	2½ per cent.	55	60	55
Todos Santos	2,0 0,000	100	100	0½ "	27	28	29¾
Nitrate Cos:							
Agua Santa	5,000,000	5'0	500	6 "	133	135	132
Antofogasta	2,000,000	200	200	10 "	198	200	200
Union	3,'00,000	200	100	3 "	78	79	79½

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SALT LAKE CITY STOCKS.* Week ending June 8.

Name of Company. †	Par value.	Bid.	Asked.	Actual selling price.	Name of Company.	Par value.	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.30	$0.40	$0.35	Daly	$20	$6.25	$7.00	$7 00
Alliance	1	1.05	1.20	1.10	Daly West	20	6.25	6.75	6.50
Amer. Nat Gas	10	.15	.30	.20	Horn Silver	25	2.50	2.85	2.75
Anchor	20	3.00	3.25	3.25	Mammoth	25	1.00	1 25	1.10
Bogan	1	.30	.60	.50	Mercur	25	3.65	3.90	3.80
Bullion-Beck & C.	10	8.75	10.00	9.50	Morgan	125	.50	.85	.80
Cane Springs	5	.50	.85	.....	Ontario	100	8.50	10.25	10.00
Centen'l Eureka	50	48.00	52.00	51.00	Silver King	20	14.00	14.75	14.50
Cleveland Con	1	.....	.50	.....	Tetro	1	.....	.25	.....
Comstock	25	.50	.75	.55	Utah	1	.50	1.00	.....
Dalton	5	.01	.02½	.02	Utah Lime	10	3.50	4.25	4.00

* Special Report of James A. Pollock. † All the companies are located in Utah.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure .18@.20
Commercial, in bbls. and cbys .01¼@.02
Carbonic, liquefied, ℔ lb .07@.10
Chromic .20
Hydrofluoric .04@.07
Alcohol—95%, ℔ gall .$2.30@$2.40
Absolute .$3.80
Alum—Lump, ℔ cwt .$1.60@$1.80
Ground, ℔ cwt .$1.70@$1.90
Lump ℔ ton, Liverpool .£4 10s.@£4 17s.
Aluminum Chloride—Pure, ℔ lb .$1.25
Amalgamating solution, ℔ lb .60
Sulphate, ℔ cwt .$1.25@$1.75
Ammonia—Sal., lump, ℔ lb .09@.10
Carbonate, ℔ lb., English and German .08½@.09¼
Muriate, white, in bbls., ℔ lb .07@.08
Aqua Ammonia—(in cbys) 18° ℔ lb .03@.04
20°, ℔ lb .04@.05
26°, ℔ lb .04¾@.05
Antimony—Oxymur, ℔ lb .04@.06
Regulus, ℔ lb .07@.08
Oxide .18@.25
Argols—Red, powdered, ℔ lb .15
Arsenic—White, powdered ℔ lb .03@.03¼
Red ℔ lb .05½@.06
Yellow .08@.09
White at Plymouth, ℔ ton .£12 2 6
Asbestos—Canadian, ℔ ton .$15@$120
Italian, ℔ ton, c. i. f. L'pool .£18@£60
Ashes—Pot, 1st sorts, ℔ lb .04½@.04⅝
Pearl .05½@.06
Asphaltum—
Prime Cuban, ℔ lb .04@.05
Hard Cuban, ℔ ton .$28.00@$30.00
Trinidad, refined, ℔ ton .$30.00@$35.00
Egyptian and Syrian, ℔ lb .05@.07½
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton $15.00@$29.00
Barium—Carbonate, pure precip., ℔ lb .10
Carbonate, commercial, ℔ lb .03
Chlorate, crystal, ℔ lb .25@ 3)
Chloride, commercial, ℔ lb .02@.02½
Iodide, ℔ oz .40
Nitrate, ℔ lb .06¼@.07
Sulph., Am. prime white, ℔ ton .$15@$18
Sulph., foreign, floated, ℔ ton .$16@$18
Sulph., off color, ℔ ton .$10@$11.50
Carb., lump, f. o. b. L'pool, ℔ ton .£6
Bauxite—℔ ton .$7 @ $8
Bichromate of Potash—Scotch, ℔ lb .09@.10
American, ℔ lb .09@.09½
Bichromate of Soda—℔ lb .08@.09
Borax—Refined, ℔ lb., in car lots .06@06½
Bromine—℔ lb .25@ 35
Cadmium Minion—℔ lb .$2.00
Cadmium Iodide—℔ lb .$5.00
Chalk—℔ ton .$1.50@$2.25
Precipitated, ℔ lb .04@.05
China Clay—English, ℔ ton .$12@$17.00
Domestic, ℔ ton .$9@$11
Chlorine, liquefied, ℔ lb .25
Chrome Yellow—℔ lb .10@.25
Chrome Iron Ore—℔ ton, San Francisco .$10.00
Chromalum—Commercial, ℔ lb .03@.05
Cobalt—Oxide, ℔ lb .$1.40@$1.55
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ℔ lb .03¾@.04¼
Nitrate, ℔ lb .25
Copperas—Common, ℔ 100 lbs .50@.65
Best, ℔ 100 lbs .$1.25@$1.50
Liverpool, ℔ ton, in c'sks .£1 11s.@£1 15s.
Corundum—Powdered, ℔ lb .04½@.09
Flour, ℔ lb .03
Cryolite—Pow., ℔ lb., bbl. lots .06½@.07¼
Emery—Grain, ℔ lb. (℔ kg.) .04½@.05
Flour, ℔ lb .02½@.04
Epsom Salt—℔ lb .01@.01½
Feldspar—Ground, ℔ ton .$6.00@$10.00
Fluorspar—Powdrd, No. 1, ℔ ton .$15@$20
Lump, at mine .$6@$8
French Chalk—℔ ton .$2.25@$2.30
Fuller's Earth—Lump, ℔ ton .$10@$20
Glauber's Salt—in bbls., ℔ cwt .50@ 75
Glass—Ground, ℔ lb .09@.10
Gold—Chloride, pure, crystals, ℔ oz .$12.00
pure, 15 gr., c. v., ℔ doz .$5.40
liquid, 15 gr., g. a. v., ℔ doz .$5.50
Chloride and sodium, ℔ oz .$6.00
15 gr., c. v., ℔ doz .$2.75
Oxide, ℔ oz .$27.25
Gypsum—Calcined, ℔ bbl .$1.75
Iodine—Resublimed, ℔ lb .$3.50@$4.60
Iridium—Oxide ℔ lb .$90
Iron—Nitrate, 40°, ℔ lb .01@.01¼
47°, ℔ lb .02@.02½
Kaolin—*See China Clay.*
Kieserite—℔ ton .$9@$10
Lead—Red, American, ℔ lb .04¼@.05
White, American, in oil, ℔ lb .05¼@.06
White, English, ℔ lb., in oil .06¼@.07½
Acetate, or sugar of, white .06@.08
Nitrate .05¾@.06½
Lime Acetate—Am. Brown .90@.95
" Gray .$1.50@$1.60
Litharge—Powdered, ℔ lb .04¼@.04½
English flake, ℔ lb .07½@.09½
Magnesite—Crude, ℔ ton of 1,015 kilos .$7@$10
Calcined, ℔ ton of 2,240 lbs .$12@$14
Brick, ℔ ton of 2,240 lbs .$47.50
Manganese—Ore, per unit .23@.28
Oxide, ground, ℔ lb .02½@.06¼
Mercuric Chloride—(*Corrosive Sublim.*) ℔ lb .55@.60
Marble Dust—℔ bbl .85c.@$1
Metallic Paint—Brown ℔ ton .$20@ $25
Red .$20@ $25
Mica—In sheets according to size, 1st quality, ℔ lb .$3.25@$6
Mineral Wool—Ordinary slag .01½@02¼
Ordinary rock
Nitre Cake—℔ ton .$2.50@$3
Ochre—Rochelle, ℔ lb .01@.01½
Washed Nat Oxf'rd, Lump, ℔ lb. 0¼@.0½
Washed Nat Oxf'rd, Pow., ℔ lb. 0¾@.01¼
Golden, ℔ lb .03@.06
Domestic, ℔ ton .$8@$10
Oils, Mineral—
Cylinder, light filtered, ℔ gal .12@.20
Dark filtered, ℔ gal .10@.15
Extra cold test, ℔ gal .20@.24
Dark steam refined, ℔ gal .07½@.12
Phosphorus—℔ lb .50@.55
Precip., red, ℔ lb .75@.80
white, ℔ lb .80@.85
Platinic Chloride—Dry, ℔ oz .$6
Plumbago—Ceylon, ℔ lb .04@.05
American or German, ℔ lb .02@.02½
Potassium—Cyanide, ℔ lb., C. P. 52 .50
65% .40
mining .20@.22
Bromide, domestic, ℔ lb .28@.32
Chlorate, English, ℔ lb .10@.12
Chlorate, powdered, English, ℔ lb .12@.14
Carbonate, ℔ lb., by casks, 98-99% .06@.07
Caustic, ℔ lb., pure slick .04½@.06
Iodide, ℔ lb .$2.58@$2.80
Nitrate, refined, ℔ lb .05@.06
Bichromate, ℔ lb .09@.11
Yellow Prussiate, ℔ lb., 24c. contr., 25c. single casks .39@.45
Red Prussiate, ℔ lb .39@.45
Pumice Stone—Select lumps, lb .03½@.15
Original cks., ℔ lb .01½@.02
Powdered, pure, ℔ lb .01½@.02
Pyrites—Non-cupreous, p. unit .10@.11
Quartz—Ground, ℔ ton .$6.00@$10.00
Rotten Stone, Powdered, ℔ lb .03¼@.03¾
Lump, ℔ lb .06@.07
Original cks, ℔ lb .04½@.05½
Rubbing stone, ℔ lb .03½@.04
Salt—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton .$7@$7.50
Common, fine, ℔ ton .$4.50@$5
Turk's Island, ℔ bush .28@ 30
Salt Cake—℔ ton .$9@$15
Saltpeter—Crude, ℔ lb .04@.05
Soapstone—Ground, ℔ ton .$6@$8
Block and slab according to size.
Sodium—Prussiate, ℔ lb .22@.24
Phosphate, ℔ lb .04@.05
Stannate, ℔ lb .06@.12
Tungstate, ℔ lb .30@.35
Hyposulphite, crystals, in casks .$1.70@$1.80
Strontium—Nitrate, ℔ lb .08@.09
Sulphur—Roll, ℔ lb .01½@.02
Flour, ℔ lb .01¼@.01¾
Sylvinit, 27@35%, per unit .36½@.37½
Talc—Ground French, ℔ lb .01¼@.01½
American No. 1, ℔ lb .01@.01½
American No. 2 .006@.008
Terra Alba—French, ℔ cwt .50@.80
English .70@.80
Domestic, ℔ ton .$8.50@$10
Tin—Crystals, in kegs or bbls .14@.15
feathered or flossed .70
Muriate, sirgle .67@.12
Double or strong, 54° B .10@.1
Oxymur, or nitro .1
Vermilion—Imp. English, ℔ lb .64@ 66
Am. quicksilver, bulk .59@.62
Am. quicksilver, bags .60@.64
Chinese .85@$1.00
Trieste .90@.95
American .11¼@ 12
Zinc White—Am., Dry, ℔ lb .03¼@.04½
Antwerp, Red Seal, ℔ lb .05½@.05¾
Paris, Red Seal, ℔ lb .06¾@.07
Muriate solution .06
Sulphate crystals in bbls., ℔ lb .03@.03

THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

Arsenic (metallic), per kilo .$0.25
Barium (ex amalgam) .2.12
" (per electrol.) .7.75
Bismuth (metallic), per kilo .6.25
Cadmium (metallic), " .2.75
Calcium (per electrol.) .5.25
Cerium (pulv.) .2.25
" (fusum in globulis) .5.50
Chromium (fus.) .40
" (cryst.) .75
Cobalt (metallic), per kilo .10.00
" (pure), per kilo .40.00
Didymium (pulv.) .5.50
Erbium-Yttrium (oxydat.) .10.00
Gallium (cryst.) .100.00
Germanium (fus.) .37.50
(pulv.) .35.00
Glucinum (pulv.) .7.00
" (cryst) .10.75
Indium .5.00
Iridium (fusum) .1.25
Lanthanum (pulv.) .6.00
" (per electrol.) .11.00
Lithium (in glob.) .5.00
" (wire) .6.25
Manganese fusum) .25
Molybdenum (pulv.) .12½
Niobium (pulv.) .4.25
Osmium .1.00
Palladium (wire) .06
" (pulv.) .1.00
Potassium (metal), per kilo .27.50
Rhodium .1.63
Ruthenium .2.50
Rubidium .6.25
Selenium (cryst.) .50
" (precipitates) .62½
Strontium (per electrol.) .7.25
" (ex amalgam) .3.25
Tantalum .4.75
Tellurium (fusum) .50
" (precipitates) .22½
Thallium .03¾
Titanium .1.13
Tungsten (pure) .05
Uranium .1.
Vanadium .1.50

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par val	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*	.....	.....	.....	$687,500	Jan.	1892	.05
2	Alaska Treadwell, g.	Al'ska	5,000,000	200,000	25	.....	.....	.....	.....	2,224,000	Apr.	1895	.37½
3	Alice, s.	Mont.	10,000,000	400,000	25	*	.....	.....	.....	975,000	Nov.	1891	.06¼
4	Amador, c.	Cal.	1,250,000	250,000	5	*	.....	.....	.....	31,250	Aug.	1890	.12½
5	American, c.	Colo.	3,000,000	300,000	10	*	.....	.....	.....	225,000	Mar.	1892	.05
6	American Belle, s. g. c.	Colo.	2,000,000	400,000	5	*	.....	.....	.....	50,000	Apr.	1891	.12½
7	Americ'n & Nettie, g. s.	Colo.	.....	300,000	.....	.....	.....	.....	.....	175,000	Mar.	1892	.05
8	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb.	1891	1.00
9	Argyle, g.	Colo.	1,000,000	1,000,000	1	*	.....	.....	.....	20,000	Mar.	1892	.01
10	Aspen Mg. & S., s. L.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	900,000	July.	1894	.10
11	Aurora,	Mich.	2,500,000	100,000	25	.....	.....	.....	.....	650,000	Feb.	1893	2.00
12	Bad ax, s.	Ont.	250,000	50,000	5	.....	.....	.....	.....	37,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	.....	.....	.....	.....	382,000	Jan.	1895	.05
14	Bangkok C. Bell, s. L.	Colo.	600,000	600,000	1	.....	.....	.....	.....	3,510	May	1895	.01
15	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1	.....	.....	.....	.....	67,500	Dec.	1891	.09¾
16	Belden, F. E., m.	N. H.	500,000	100,000	5	.....	.....	.....	.....	143,113	May.	1895	.01
17	Belle Isle, s.	Nev.	10,000,000	100,000	100	230,271	Sept	1893	.10	340,000	Dec.	1879	.25
18	Belcher, s. g.	Nev.	10,400,000	104,000	100	3,262,900	Nov.	1893	.20	15,397,200	Apr.	1876	1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	120,000	Dec.	1889	.25	200,000	Jan.	1890	.10
20	Best Friend	Colo.	1,000,000	1,000,000	1	*	.....	.....	.....	90,000	Feb.	1892	.01
21	Bi-Metallic, s. g.	Mont.	5,000,000	200,000	25	.....	.....	.....	.....	1,630,000	June	1893	.10
22	Bodie Con., g. l.	Cal.	10,000,000	100,000	100	714,990	July	1893	.15	1,677,572	Dec.	1894	.25
23	Boston & Mont., g.	Mont.	2,500,000	250,000	10	*	.....	.....	.....	520,000	June	1886	.15
24	Boston & Mont., c. s.	Mont.	3,700,000	170,000	25	*	.....	.....	.....	2,475,000	May.	1895	2.00
25	Brotherton, l.	Mich.	2,000,000	80,000	25	*	.....	.....	.....	120,000	Mar.	1893	.50
26	Bulwer, g.	Cal.	10,000,000	100,000	10	155,000	July	1893	.15	190,000	Oct.	1892	.05½
27	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*	.....	.....	.....	150,000	Oct.	1888	.06
28	Caledonia, g.	Dak.	1,000,000	100,000	100	575,000	May.	1885	.15	192,000	Oct.	1890	.08½
29	Calumet & Hecla c.	Mich.	2,500,000	100,000	25	1,200,000	.....	.....	.....	41,375,000	May.	1895	5.00
30	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	1,110,000	May	1895	.50
31	Central, c.	Mich.	500,000	20,000	25	100,000	Oct..	1861	.65	1,970,000	Feb..	1891	1.00
32	Champion, g	Cali..	340,000	34,000	10	150,000	.....	.....	.....	208,800	May.	1895	.10
33	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*	.....	.....	.....	1,850,000	Dec.	1884	.25
34	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	.....	.....	.....	.....	340,000	June	1893	.06
35	Colorado Central, s. L.	Colo..	2,700,000	275,000	10	*	.....	.....	.....	502,661	Apr..	1893	.05
36	Commonwealth, s.	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	90,000	Nov..	1890	.20
37	Confidence, s. L.	Nev..	2,496,000	24,960	100	1,589,550	Aug..	1892	.50	277,680	Apr..	1889	1.00
38	Con. Cal. & Va., s. g	Nev..	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,952,800	Mar.	1895	.25
39	Contention, s.	Ariz..	12,500,000	250,000	50	.....	.....	.....	.....	2,637,500	Aug.	1892	.20
40	Cook's Peak, s.	N. M..	2,000,000	200,000	10	.....	.....	.....	.....	119,532	Nov.	1892	.05
41	Cop. Queen Con., c.	Ariz..	2,000,000	200,000	10	.....	.....	.....	.....	1,960,000	May..	1895	.25
42	Coptis	Nev.	10,000,000	100,000	100	.....	.....	.....	.....	68,000	Feb..	1895	.01
43	Cortes, s.	Nev.	1,500,000	300,000	5	*	.....	.....	.....	735,000	Feb..	1893	.15
44	Crescent, s. L. g.	Utah.	15,000,000	600,000	25	60,000	Oct.	992	.10	288,000	Oct..	1888	.03
45	Crown Point, g. s.	Nev..	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
46	Daly, s. L.	Utah.	3,000,000	150,000	20	.....	.....	.....	.....	2,850,000	May..	1893	.25
47	†Deadwood-Terra, g.	Dak..	5,000,000	200,000	25	*	.....	.....	.....	1,140,000	Sept..	1892	.05
48	DeLamar, g. s.	Idaho	2,000,000	400,000	5	.....	.....	.....	.....	1,516,000	Apr..	1895	.36
49	Deriber B. Grav., g.	Cal..	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Mar..	1891	.05
50	Dexter, g. s.	Nev	1,000,000	100,000	10	.....	.....	.....	.....	245,000	July	1893	.25
51	Elkhorn, s.	Mont.	1,000,000	200,000	5	*	.....	.....	.....	1,324,689	May	1895	.12½
52	Elkton	Colo..	500,000	500,000	1	.....	.....	.....	.....	60,000	Dec.	1894	.01
53	Enterprise, s.	Colo..	2,500,000	500,000	5	.....	.....	.....	.....	850,000	June.	1893	.25
54	Eureka Con., s. L. g.	Nev..	1,000,000	50,000	20	550,000	June	1889	.50	5,112,500	Jan.	1892	.25
55	Eureka Hill, g. s. L.	Utah.	1,000,000	10,000	10	.....	.....	.....	.....	1,500,000	Jan..	1891	.04
56	Evening Star, s. L.	Colo.	500,000	50,000	10	.....	.....	.....	.....	337,500	Dec.	1889	.25
57	Father de Smet, g.	Dak..	10,000,000	100,000	100	900,000	Nov..	1878	1.00	1,125,000	Dec.	1885	.20
58	Franklin, c.	Mich..	1,000,000	40,000	25	330,000	June	1867	2.50	1,240,000	Jan.	1894	2.00
59	Glengarry	Mont.	1,000,000	100,000	10	.....	.....	.....	.....	10,000	June.	1891	10
60	Gold & Globe, g.	Colo..	750,000	750,000	1	.....	.....	.....	.....	9,375	Mar..	1895	.00¼
61	Gould & Curry, s. g.	Nev..	10,800,000	108,000	100	4,688,400	Oct	1893	.10	3,826,800	Oct..	1870	10.00
62	Grand Prize, s.	Nev..	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
63	Granite Mountain, s.	Mont.	10,000,000	400,000	25	.....	.....	.....	.....	12,120,000	July.	1892	.20
64	Great Western, L. Q.	Cal..	5,000,000	50,000	100	50,526	.....	1889	.15	988,366	Nov.	1893	.25
65	Hale & Norcross, g. s.	Nev..	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug.	1888	.50
66	Hecla Con., s. g. L. c.	Mont.	1,500,000	30,000	50	.....	.....	.....	.....	2,070,000	May.	1895	.50
67	Hel'a Mg. & Red. s. L. g.	Mont.	3,315,000	663,000	5	*	.....	.....	.....	197,970	July.	1886	.06
68	Helena & Frisco, s. L.	Idaho	2,500,000	500,000	5	.....	.....	.....	.....	260,000	Feb..	892	.02
69	Helena & Victor.	Mont.	1,000,000	200,000	5	.....	.....	.....	.....	80,000	May.	1892	.05
70	¶Holmes, s.	Nev..	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr..	1892	.25
71	Homestake, g.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,493,750	May..	1895	.25
72	Hope, s.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	52,250	Jan.	1895	.10
73	Horn-Silver, s. L.	Utah.	10,000,000	400,000	25	.....	.....	.....	.....	5,137,500	Apr..	1895	.12½
74	Idaho, g.	Cal..	310,000	3,100	100	*	.....	.....	.....	5,489,000	Sept.	1893	2.50
75	Illinois, s.	N. M..	100,000	100,000	1	*	.....	.....	.....	45,000	Apr..	1889	.20
76	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	355,000	May..	1895	.02
77	Iron-Silver, s. L.	Colo.	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	Apr..	1888	.20
78	Jackson, g. s.	Nev.	5,000,000	50,000	100	247,500	Mar..	1893	.20	83,000	Feb.	1895	.04
79	Kearsarge, c.	Mich..	000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan..	1890	2.00
80	Kennedy	Cal..	10,000,000	000,000	100	.....	.....	.....	.....	1,550,000	May	1895	.48
81	Leadville Con., s. L.	Colo.	4,000,000	400,000	10	*	.....	.....	.....	516,000	Feb..	1893	.03
82	Lexington, g. s.	Mont.	4,000,000	40,000	100	*	.....	.....	.....	652,200	July.	1893	.90
83	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	820,000	Dec.	1890	.05
84	Maid of Erin	Colo..	3,000,000	600,000	5	*	.....	.....	.....	708,500	Apr..	1893	.25
85	Mammoth, s. L. c.	Utah	10,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Dec..	1891	.10
86	Maxfield	Utah.	3,000,000	300,000	10	.....	.....	.....	.....	117,000	Apr..	1892	.03
87	Mayflower, D. gravel	Cal..	1,200,000	60,000	20	.....	.....	.....	.....	224,000	May..	1895	.10
88	Minas Prietas, g. s.	Mex..	1,000,000	100,000	10	*	.....	.....	.....	350,000	Dec..	1890	.50
89	Minnesota, c.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,320,000	Mar.	1876	.....
90	Minnesota Iron, l.	Minn.	16,500,000	165,000	100	.....	.....	.....	.....	2,745,000	Apr.	1893	1.50
91	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	19,500	Jan..	1891	.01	4,080,000	Jan	1895	.05
92	Monitor, g.	Nev.	2,500,000	250,000	10	.....	.....	.....	.....	45,000	Oct	1890	.03
93	Mono, g.	Cal..	5,000,000	50,000	100	797,500	Feb..	1893	.25	12,500	Mar	1886	.25
94	Montana, L., g. s.	Mont.	3,300,000	660,000	5	*	.....	.....	.....	2,701,775	Jan.	1895	12½
95	Moose	Colo.	600,000	600,000	1	.....	.....	.....	.....	72,000	Nov.	1894	.02
96	Morning Star, s. L.	Colo..	1,000,000	100,000	10	.....	.....	.....	.....	1,025,000	Dec	1891	.05
97	Morning Star Drift, g	Cal..	240,000	2,400	100	.....	.....	.....	.....	376,700	May..	1895	7.00
98	Moulton, s. g.	Mont.	2,000,000	400,000	5	*	.....	.....	.....	430,000	Feb.	1894	.05
99	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov	1893	.30
100	Mt. Rosa, g	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	10,000	Jan..	1895	.10
101	Napa, g.	Cal..	700,000	100,000	7	.....	.....	.....	.....	700,000	May.	1895	.20
102	Navajo, g. s.	Nev..	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,111	Apr..	1889	.10
103	New Guston, s.	Colo..	550,000	110,000	5	.....	.....	.....	.....	1,877,500	Apr..	1892	.75
104	North Banner Con.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	30,000	July	1891	.05
105	North Commonw'th	Nev..	10,000,000	100,000	100	90,000	Jan..	1893	.10	25,000	June	1891	.25
106	N. Hoover Hill, g. s.	N. C..	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec.	1885	.06½
107	North Belle Isle, s.	Nev.	10,000,000	100,000	100	513,075	April	1893	.10	230,000	May	1888	.50
108	North Star, g.	Cal..	1,000,000	100,000	10	20,000	.....	1885	.02	450 000	June	1893	.50
109	Nugget, g.	.....	1,000,000	1,000,000	1	*	.....	.....	.....	10,000	Jan.	1895	.00½
110	Omaha Cons., g.	Cal..	2,400,000	24,000	100	.....	.....	.....	.....	97,200	July..	1894	.15
111	Ontario, s. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	13,175,000	Oct..	1892	.50
112	Ophir, g. s.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan	1880	1.00
113	Osceola, c.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,897,500	Jan..	1895	1.00
114	Pacific Coast, s.	Cal..	2,000,000	20,000	100	.....	.....	.....	.....	422,500	July.	1893	1.00
115	Parrot, c.	Mont.	2,300,000	230,000	10	.....	.....	.....	.....	1,569,000	June	1893	.10
116	Pet o	Utah.	10,000,000	10,025	100	.....	.....	.....	.....	17,500	July..	1891	.75
117	Pharmacist, g.	Cal..	1,200,000	1,200,000	1	.....	.....	.....	.....	80,000	June.	1893	.01
118	Plumas Eureka, g.	Cal..	1,406,250	140,600	50	.....	.....	.....	.....	2,696,295	Oct..	1893	.18
119	Plymouth Con., g.	Cal..	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb..	1888	.40
120	Poorman, g. s.	Idaho	375,000	300,000	125	*	.....	.....	.....	68,260	Sept.	1892	.15
121	Portland, g.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	161,000	May..	1895	.01
122	Quicksilver, pref., Q.	Cal..	4,300,000	43,000	100	.....	.....	.....	.....	1,823,911	June	1891	1.25
123	" com., Q	Cal..	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July.	1887	.40
124	Quincy, c.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862	.....	7,490,000	May.	1895	4.00
125	Red Cloud	Idaho	1,000,000	200,000	5	.....	.....	.....	.....	153,000	Dec..	1892	.10
126	Retriever, L.	S. Dak	1,250,000	250,000	5	.....	.....	.....	.....	20,000	Aug..	1891	.03
127	Rialto, g.	Colo..	300,000	300,000	1	*	.....	.....	.....	50,250	Apr..	1892	.01½
128	Richmond, s. L.	Nev..	1,350,000	54,000	25	*	.....	.....	.....	4,386,780	Sept.	1892	.25
129	Rico-Aspen	Colo..	5,000,000	1,000,000	5	.....	.....	.....	.....	325,000	Nov..	1894	.02½
130	Ridge, c.	Mich..	1,250,000	50,000	25	219,939	Mar.	1886	50	99,785	Feb..	1880	.50
131	Robinson Con., s. L.	Colo..	10,000,000	200,000	50	.....	.....	.....	.....	585,000	Mar..	1886	.05
132	Savage, s.	Nev.	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	8.00
133	Sierra Buttes, g.	Cal..	2,225,000	122,500	10	.....	.....	.....	.....	1,559,933	Oct..	1893	12½
134	Sierra Nevada, s. g.	Nev..	10,000,000	100,000	100	6,521,910	Aug.	1893	.30	102,000	Jan..	1871	1.00
135	Silver Cord, s. L. g.	Colo..	5,000,000	500,000	10	.....	.....	.....	.....	270,000	Apr..	1889	.10
136	Silver King, s.	Utah.	10,000,000	100,000	100	97,479	Aug.	1892	.25	987 500	May.	1895	.25
137	Silver Mg. of L. V., s. L.	N. M..	500,000	500,000	1	.....	.....	.....	.....	300,000	Dec..	1891	4.05
138	Small Hopes Con., s.	Colo..	5,000,000	250,000	20	*	.....	.....	.....	3,225,000	Oct..	1895	.10
139	Standard, g. s.	Cal..	10,000,000	100,000	100	100,000	June	1890	.50	3,771,159	May..	1895	.10
140	Swansea, g. s.	Colo..	600,000	60,000	10	.....	.....	.....	.....	39,000	Sept.	1892	.10
141	Tamarack, c.	Mich..	1,250,000	50,000	25	520,000	April	1885	3.00	4,070,000	Dec.	1894	4.00
142	Trinity Riv'r Hydr., g	Colo..	500,000	500,000	1	*	.....	.....	.....	37,500	Apr..	1894	.00½
143	Union	Colo..	1,250,000	1,250,000	1	.....	.....	.....	.....	27,740	May..	1895	.01
144	United Verde, c.	Ariz.	3,000,000	300,000	10	*	.....	.....	.....	562,500	Dec..	1893	.25
145	Victor, g	Colo..	1,000,000	200,000	5	.....	.....	.....	.....	325,000	May..	1895	.05
146	Ward Con., s.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	20,000	Dec	1889	.05
147	W. Y. O. D.	Cal..	60,000	30,000	2	22,500	May.	1891	.10	96,000	Jan..	1895	.10
148	Yankee Girl, s	Colo.	1,300,000	260,000	5	.....	.....	.....	.....	520,000	July.	1891	.25
149	Yellow Jacket, g.	Nev.	12,000,000	120,000	100	.....	July.	1893	.25	2,184,000	Aug..	1871	1.50

NON-DIVIDEND-PAYING MINES

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and am't of last.		
1	Ajax, g. s. L.	Utah.	$3,000,000	300,000	$10	$15,000	Mar.	1895	$21
2	Alliance, s. g.	Utah.	100,000	100,000	1	20,000	Feb..	189	.10
3	Alloues, c.	Mich.	2,000,000	80,000	25	1,424,937	Oct..	1891	.10
4	Alpha Con., g. s.	Nev.	3,000,000	30,000	100	209.000	Sept.	1892	.10
5	Alta, s.	Nev.	10,080,000	100,800	100	3,369,880	Jan.	1892	05
6	American Flag, s.	Colo..	1,250,000	125,000	1	300,000	June	1887	.....
7	Anchor, s. L. g.	Utah.	3,000,000	150,000	5	560,000	July.	1893	5
8	Barcelona, g.	Nev.	5,000,000	200,000	5	*	.....	.....	.....
9	Belmont, g.	Cal..	500,000	500,000	100	*	.....	.....	.....
10	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April	1886	.10
11	Best & Belcher, s. g.	Nev.	10,080,000	100,800	10	2,405,275	Aug..	1892	.25
12	Black Oak, g.	Cal..	3,000,000	300,000	100	*	.....	.....	.....
13	Brownlow, g.	Colo..	250,000	250,000	5	.....	.....	.....	.....
14	Brunswick, g.	Cal..	2,000,000	400,000	2	.....	.....	.....	.....
15	Bullion, s. g.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
16	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10	.....	.....	.....	.....
17	Butte Queen, g.	Cal..	1,000,000	100,000	1	6,000	Jan..	1892	.....
18	Calaveras, g.	Cal..	500,000	500,000	5	.....	.....	.....	.....
19	Calaveras Con., g.	Cal..	800,000	160,000	10	.....	.....	.....	.....
20	California, g.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	.....
21	California Con. L. Q.	Cal..	2,250,000	450,000	10	.....	.....	.....	.....
22	Challenge Con., g. s.	Nev.	5,000,000	50,000	10	.....	.....	.....	.....
23	Chollar, s. g.	Nev.	11,200,000	112,000	2	2 :2 0	May..	1895	.50
24	Colchis, s. g.	N. M..	500,000	150,000	5	.....	.....	.....	.....
25	Colorado, s.	Colo..	1,625,000	325,000	1	.....	.....	.....	.....
26	Comstock, s.	Utah.	1,250,000	250,000	100	.....	.....	.....	.....
27	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar.	1887	.10
28	Con. Imperial, g. s.	Nev.	5,000,000	50,000	50	2,062,500	Jan..	1892	.25
29	Con. New York, g. s.	Nev.	5,000,000	100,000	100	110,000	Mar..	1892	.10
30	Con. Pacific, g.	Cal.	6,000,000	60,000	10	198,000	June	1890	.10
31	Crescent, s. L.	Colo.	3,000,000	300,000	100	*	.....	.....	.....
32	Crocker, s.	Ariz.	10,000,000	100,000	1	165,000	Aug.	1892	.05
33	Crowell, g.	N. C..	500,000	500,000	1	.....	.....	.....	.....
34	Dahlonega, g.	Ga.	250,000	250,000	10	*	.....	.....	.....
35	Decatur, s.	Colo..	1,500,000	300,000	.....	.....	.....	.....	.....
36	Denver City s.	Colo..	5,000,000	500,000	11	*	.....	.....	.....
37	Denver Gold, g.	Colo.	30,000	60,000	5	.....	.....	.....	.....
38	Dickens-Custer, s.	Idaho	2,180,000	420,000	5	.....	.....	.....	.....
39	Durango, g.	Colo..	500,000	500,000	1	*	.....	.....	.....
40	El Dorado, g.	Cal..	1,000,000	250,000	4	*	.....	.....	.....
41	Emma, s	Utah.	625,000	500,000	125	.....	.....	.....	.....
42	Emmons, s. L.	Colo..	2,000,000	2 000,000	1	.....	.....	.....	.....
43	Empire, s.	Utah	10,000,000	100,000	100	*	.....	.....	.....
44	Eureka Tunnel, s. L.	Nev..	10,000,000	100,000	100	.....	.....	.....	.....
45	Exchequer, s. g.	Nev..	10,000,000	100,000	100	940,000	Jan..	1892	.25
46	Found Treasure, g. s.	Nev..	10,000,000	100,000	100	130,500	Jan..	1892	.30
47	Gogebic I. Syn., l.	Wis..	8,600,000	200,000	25	.....	.....	.....	.....
48	Gold Cup, s.	Colo..	500,000	500,000	1	*	.....	.....	.....
49	Golden Era, s	Mont.	1,000,000	200,000	10	*	.....	.....	.....
50	Gold Flat, g.	Cal.	1,000,000	100,000	10	5,000	Mar..	1892	.05
51	Gold Rock, g.	Cal.	1,000,000	500,000	2	.....	.....	.....	.....
52	Golden FeatherCh. g	Cal..	900,000	180,000	5	.....	.....	.....	.....
53	Goodyear G. s. L.	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
54	Grand Duke, s.	Colo..	800,000	80,000	10	.....	.....	.....	.....
55	Gregory Con., g.	Mont.	3,000,000	300,000	10	.....	.....	.....	.....
56	Harlem M. & M. Co., g.	Cal..	1,000,000	200,000	5	.....	.....	.....	.....
57	Hartery Con., g.	Cal..	1,000,000	100,000	10	22,000	Oct..	189	05
58	Hartshorn, g. s. l.	S. Dak	1,250,000	250,000	5	8 750	Sept.	1891	.00¼
59	Head Cent. & Tr., s. g	Ariz..	10,000,000	100,000	100	16,981	Mar..	189	.03
60	Hector, g.	Cal..	1,500,000	300,000	5	45,000	Jan..	189	.15
61	Himalaya, g. s. l.	Utah.	1,800,000	80,000	10	12,800	Oct..	1892	.00¼
62	Holywood	Cal..	200,000	100,000	2	.....	.....	.....	.....
63	Huron, c.	Mich.	1,000,000	40,000	25	230,000	May.	1887	1.00
64	Idaho, g. s.	Idaho	1,250,000	250,000	5	.....	.....	.....	.....
65	Ingalls, g.	Colo..	100,000	20,000	5	.....	.....	.....	.....
66	Ironton, I. c.	Wis.	1,000,000	40,000	25	.....	.....	.....	.....
67	Iroquois, c.	Mich.	1,256,000	50,000	25	.....	.....	.....	.....
68	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July	1892	.10
69	Julia Con., g. s.	Nev..	11,000,000	110,000	100	1,463,000	Jan..	1889	.10
70	Justice, g. s. c.	Colo.	500,000	500,000	1	*	.....	.....	.....
71	Lacrosse, g.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
72	Little Josephine, s.	Colo..	250,000	50,000	5	.....	.....	.....	.....
73	Little Pittsburg, g. s.	Utah.	4,000,000	400,000	10	4,000	Mar..	1892	.....
74	Lone Star Cons., g.	Cal..	500,000	500,000	1	10,000	April	1892	.60
75	Madeleine, g. s. L.	Colo..	750,000	50,000	1	4,500